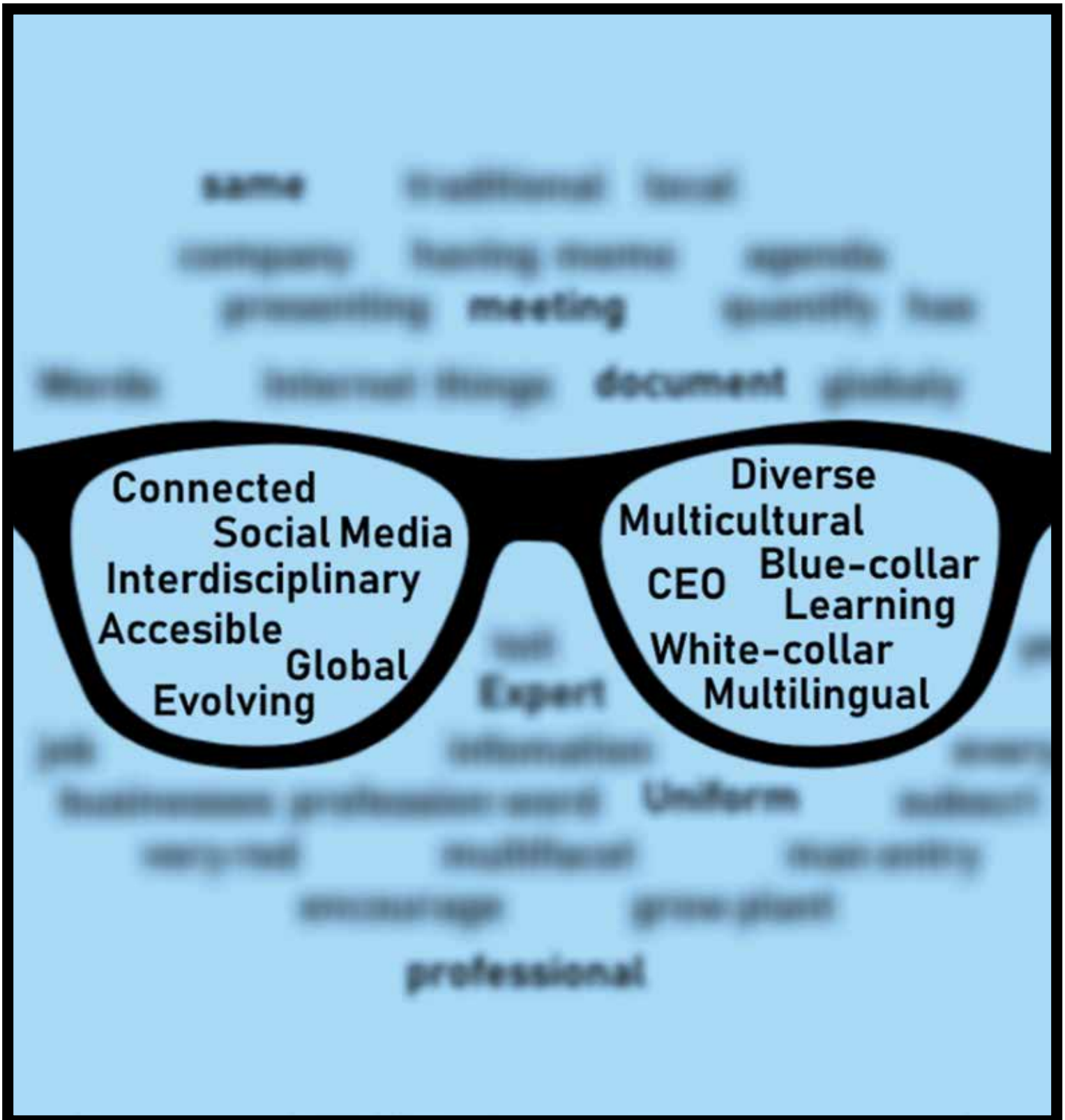


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Journal of the Society for Technical Communication



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What is a technical communicator? Technical communicators develop and design instructional and informational tools needed to ensure safe, appropriate, and effective use of science and technology, intellectual property, and manufactured products and services. Technical communicators combine multimedia knowledge and strong communication skills with technical expertise to provide education across the entire spectrum of users' abilities, technical experience, and visual and auditory capabilities. For more information visit www.stc.org/about-stc/defining-technical-communication.

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Journal of the Society for Technical Communication

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About the Journal

Technical Communication is a peer-reviewed, quarterly journal published by the Society for Technical Communication (STC). It is aimed at an audience of technical communication practitioners and academics. The journal's goal is to contribute to the body of knowledge of the field of technical communication from a multidisciplinary perspective, with special emphasis on the combination of academic rigor and practical relevance.

Technical Communication publishes articles in five categories:

- Applied research – reports of practically relevant (empirical or analytical) research
 - Applied theory – original contributions to technical communication theory
 - Case history – reports on solutions to technical communication problems
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Sam Dragga, Editor

A Suitable Sense of Style

The subject of style in technical writing is usually summarized as something equivalent to “short and simple” or words to that effect. For the writing of instructions, email messages, proposals, reports, policies, and procedures, the plain style is almost universally advised and applauded. However, for the writing of manuscripts for research journals, is a more elaborate style necessary? Authors of journal articles must establish their credibility as scholars with the right to publish on the subject in question while also making their contribution to the field’s knowledge of the subject influential as well as clear. Although short and simple might serve the mission of clarity, is a more erudite style (of diction or sentence structure) essential to the author’s credibility and the project’s influence? In the introduction and definition of new vocabulary or the adaptation and explication of pertinent theory from a related field, for example, authors must weigh the relative costs of simple versus meticulous and short versus thorough. The article must have enough of the traits of important journal articles to be identified and appreciated as a worthwhile contribution to the research of the field while also winning praise for readability.

This issue of *Technical Communication* offers five examples of this worthwhile reading, and I invited the authors to explain their decisions about the writing style adopted in their articles.

“Identifying Risk Communication Deficiencies: Merging Distributed Usability, Integrated Scope, and Ethics of Care,” by Amber Lancaster, identifies two standard approaches to the analysis of risk communication—the textual and the socio-cultural—and proposes a third way that incorporates and fortifies the existing practices. While text-based analysis focuses on the failings in risk communication materials, social-cultural analysis emphasizes ineffective dynamics and processes in organizations and communities. Amber’s third way adopts insights from research on usability and ethics in technical communication to consider risk communication in its totality—from information artifacts to users operating in the fraught and limiting conditions of their rhetorical situation. She demonstrates the power and potential of this invigorated and inclusive analysis by examining a salient historical case, the 1999 boiler explosion at the Ford Motor Company’s Rouge River facility in Dearborn, Michigan.

In discussing the writing style of this article, Amber explains how she tries to find a voice suitable to the subject as well as to the journal’s audience:

I began working on this project when it served a very different purpose (demonstrating my understanding of graduate course materials). Looking back at the many versions, I



see drastic changes in style! I do tend to think about writing style more in the revising stages of my work, mainly because, during my initial drafting, I am concentrating on developing ideas and working through larger organizational writing concerns.

One of the most challenging issues I had writing this article was revising style and tone for a wider circle of practitioner readers. My initial draft contained considerably more theoretical detail, which I later felt needed to be edited and revised to better highlight the facts of the case and the applications of theory. I could see where I used a lot of theoretical terms (especially in the literature review sections), so I targeted passages I thought could be simplified. I became aware of this early in my revising processes. I also tend to write a lot of complex sentences, so I looked for where I could simplify sentence structure.

As a usability researcher, I really wanted to emphasize the concept that meaning (how people perceive information and ideas) is so much more

than isolated words, phrases, and interfaces—it is complex, layered, and richly connected to social practices. I think my voice in this piece illustrates this concept through my efforts to connect textual and social aspects and call attention to the victims, the social and political lines of communication, the tangible articles, and the actions of individuals involved in the case.

“Cognitive and Motivational Effects of Practice with Videos for Software Training,” by Hans van der Meij, reports on a four-condition experiment involving 87 students (11–14 in age) to determine the impact of practice on learning in video-based software training. Using six one-minute videos on how to format a document in Microsoft Word, Hans examined practice before video, practice after video, practice before and after video, and video without practice. The findings of this study make clear that the inclusion of practice in video software training is no simple decision. For example, while it might be unsurprising that practice increases training time, the study also finds that practice raises negative feelings about training. Although practice does cultivate the ability to transfer learning to related tasks, especially practice after video, the video-only condition proved almost as effective in the learning of specifically trained tasks. And practice before and after video training was the least effective practice condition. Hans thus delivers a splendid example of

a research report with disruptive findings that challenge expectations and encourage continued investigation.

Hans explains his approach to writing style by detailing his persistent sensitivity to audience and the challenges of a non-native writer of English:

I don't usually experience a big difference between drafting, revising, and editing. The main issue that concerns me in writing is clarity. I try to achieve that with (re) structuring, aiming for short, 5–7 sentence paragraphs (following the advice of Rudolf Flesch), consistently reflecting on the coherence of the text (in which I am chiefly concerned with logical sequence), and advancing constructs in easy to understand terms.

My main aim in writing is to get total clarity myself. I want to understand fully what I am writing. This may seem silly, but for me it's essential. The aim pushes me to constantly question what I have written.

Two other features that I treasure in writing is the use of parallelism (presenting similar topics with the same underlying structure) and the technique of writing in definition-example pairs. When presenting a concept, I like to first define it and then add one or two examples. As a reader, I like to be able to switch from abstract to concrete and back; as a

writer, I try to accommodate likewise-inclined readers.

My writing is moderately adaptive to the specific journal for which a manuscript is intended. For *Technical Communication*, I like to include more examples and illustrations from practice. For the technical stuff like data analysis, I am hardly affected by audience considerations, however. For such text sections, I prefer to follow scientific conventions. I don't expect all readers to be able to understand these sections. I do, however, try to make the remainder of the text understandable to the wider audience. In fact, my imaginary audience is a willing reader with a fair educational level. Recently, I stumbled upon a good litmus test for my audience-aware writing when a niece asked me for tips on creating software training videos. She had completed secondary school and worked as an actor and director, but she had no scientific background. I sent her a few articles which she found quite easy to read and follow. Purpose achieved. (Her resulting videos were also well received.)

In short, clarity and plain language are my key considerations. Credibility comes from content that is well-written. Showing off by using posh language is never a consideration for me. As a non-native speaker of English, it would be silly to throw in

Sam Dragga, Editor

some fancy terms or sentences just for their own sake at one place in the text, only to make a language mistake elsewhere that a native speaker would never make.

“Using Interface Rhetoric to Understand Audience Agency in Natural History Apps,” by Sonia Stephens, examines five of the leading bird-identification guides for mobile devices. Each offers descriptions, illustrations, and recorded sounds for covered species and the ability to search by location. Sonia’s analysis identifies a series of key considerations awaiting designers of applications for mobile devices. For example, bird-identification apps support audience agency in multiple ways, allowing instructive interactions regarding scientific information, the worldwide community of birders, and the environment. The inclusion of multimedia is crucial as text, illustrations, and sound all contribute essential knowledge about birds. Also important is that bird-identification apps replicate the mobile nature of bird-identification books and build on this tradition of audience expectations and design conventions. In the creation of natural history apps, the lived experiences of users as well as the traits of earlier information materials thus serve to determine the interactive functions necessary to satisfactory audience agency.

According to Sonia, the origins of this research project (as oral presentation and personal hobby) created unusual considerations

regarding the writing style for the manuscript itself:

When writing, I typically consider style more during the process of editing and revision than during initial drafting. I tend to begin each manuscript by writing in a similar style and then return to it and consider the style of the journal and its audience. My experience of writing this paper was a bit different, however, because the manuscript started as a conference presentation that also included a heavy use of visuals. So, in this case, my initial text was more colloquial and the “flow” was driven by particular images. Some of my stylistic changes included using more scholarly language and “telling,” rather than “showing,” specific points.

Balancing technical and plain language is ordinarily something I think about during my revision process before submitting the manuscript and again later when responding to the comments of reviewers. However, this particular article focused on a topic that is a personal hobby of mine, and so I was more conscious than usual of the difference between scholarly language conventions and how the people who use the technology I was analyzing (birding apps) talk about this topic. And although I don’t consciously think about trying to develop a unique scholarly voice in my writing, I’m sure

there are phrases or structures that I use fairly frequently.

“YouTube Beauty Tutorials as Technical Communication,” by Felicia Chong, examines the 10 most-viewed beauty tutorials on YouTube and finds that the majority adopt practices considered important for instructional videos: a brief introduction, a clear objective, verbal instructions, strategic redundancy, and a mix of textual annotations, audio, and still images in support of the video. In addition, most of the 10 tutorials include personal narratives and humor, prove timely in the topics discussed, and address their audiences specifically and directly. Nevertheless, the tutorials typically look and sound unrehearsed, without effective use of recording and editing tools, and do little or nothing to establish the credibility or product knowledge of the instructor. None try to instill confidence or self-efficacy in viewers and none assure the accuracy of information or accessibility to people with limited vision or hearing. Felicia’s study thus encourages us to amplify the list of essential practices in the creation of instructional videos.

Felicia’s effort to find a suitable and effective writing style was especially interesting because she was trying to address a professional audience of technical communicators while explaining techniques in the video tutorials of amateur instructors:

I considered writing style the most when trying to describe the YouTube videos. Although

the beauty profession can be academic, the videos were mostly created by amateurs using makeup/beauty products. For example, I did not know how appropriate it would be to include the profanity or sexist language that was used in the videos. I tried to use a professional and engaging voice that does not sound pompous or cliché. My project was exploratory in nature, and I wanted to motivate other researchers to further investigate the topic, so I posed more questions for readers (e.g., asking them, “What is the cost of following best practices?”) than I usually do in other writing projects.

The biggest challenge in achieving those objectives was when I described the content of those 10 beauty tutorials, since this is not a common genre of online instructions in technical communication. For example, I struggled with the amount of details I should include for each video (e.g., should I include a word-by-word transcript?), knowing that most readers probably would not be watching or would not have watched all the videos. Due to space and medium constraints (i.e., since it would take up a lot of pages to transcribe the videos, and I would not be able to embed the videos in the article), I decided to only include the details that are most relevant to my main research questions.

“All Vietnamese Men are Brothers: Rhetorical Strategies and Community Engagement Practices Used to Support Victims of Agent Orange,” by Rebecca Walton and Sarah Beth Hopton, offers a field study involving interviews, through a translator, of 38 participants across 11 provinces of Vietnam. The study focuses on how the Vietnam Association for Victims of Agent Orange (VAVA), a nonprofit humanitarian aid organization, cultivates public participation in its mission of bringing relief to chemical war victims and their families, especially by reducing the stigma of related disabilities and promoting a sense of shared civic responsibility. In their study, Rebecca and Sarah Beth find important similarities but key differences in how American organizations engage their communities versus how VAVA achieves its objective. The resulting advice for organizations trying to engage their stakeholders is unequivocal: Generic strategies are insufficient and a thoroughgoing sensitivity to local conditions and ideals is essential.

Rebecca and Sarah Beth explain their collaborative approach to achieving a unified writing style:

We started thinking about writing style even before drafting the article, actually, because the publication venue is such an important factor in writing an article. *Technical Communication* publishes scholarship that is useful for informing practice, both in industry and in academia. So, when planning and then

writing and revising this article, we were trying to write in a way that was general enough to be relevant beyond the particular research context but was specific enough to clarify and vividly illustrate our findings. This two-part goal was important, we felt, for contributing an article that people could really use to inform action in the world.

One consideration with writing style was trying to achieve a coherent, consistent voice across sections when the purposes of each section differed: For example, the background section started a bit “newsy” or journalistic in voice because we were reporting on history, and the introduction began with a too-scholarly tone because we were positioning the article within a scholarly context. As we revised, we returned to our two major goals for the article, goals to which each section contributed in different ways: conveying generalizable information and illustrating that information clearly and vividly. Revising with those goals in mind shaped our writing style to become more coherent across sections.

We often wrote synchronously using Google docs and our process was a lot like writing jazz: One of us would riff about an idea or concept while the other took notes, transcribed, and responded with other ideas, explication, or illustration.

Once we wrestled these ideas to the page, we went back and refined, highlighting sections or terms and connecting them to larger themes/terms/concepts in the field that our audience would recognize, but we kept most of the technical/erudite language to a minimum. We decided to keep, trash, or explicate based on whether the concept/term improved accuracy or increased credibility but very rarely did we make decisions motivated by erudition. We consciously and consistently defined and illustrated terms in plain language so that our work was accessible, clear, and readable to as wide an audience as possible. We were both highly conscious of the ethical and practical implications of our work and wanted it to be read and implemented quickly and easily, so we really focused on writing in plain language and avoiding practitioner jargon or scholarly erudition.

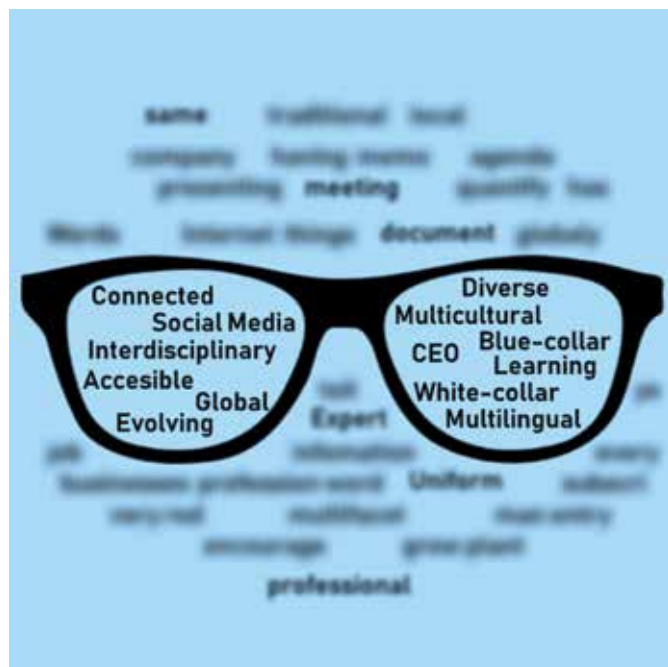
Our unique voice in this article is thanks to our strong partnership; the two of us are good collaborators. We each bring some different strengths, not only to the research but to the writing of it. For example, Sarah Beth is deeply reflective and creative, an adventurous and generous reader of wide-ranging scholarship beyond technical and professional communication (TPC). Rebecca is centered within TPC, knowledgeable about the field's scholarship and dedicated to bridging particular gaps in its collective knowledge. In general, Sarah Beth's writing voice is more descriptive while Rebecca's is more direct. That combination of styles and strengths has (we hope!) created an article with a clear purpose and contribution that is enjoyable and interesting to read.

This issue of *Technical Communication* thus offers five exciting research projects but also

five examples of writing style, each adapted to their separate subjects and purposes but a shared audience, each negotiating the challenges of clarity and credibility. The diversity of authorial voices here serves as a reminder that the "rules" of writing style are neither rigid nor static but as elastic and dynamic as language itself.

As technical communicators, we might enjoy immersion in the rigors of pertinent style guides (I know I do), but we also relish the ability to navigate the curves in specifications and conventions, invigorating ideas and making salient the humanity and vitality of the writer-reader relationship. The tactics with which we exercise this ability deserve scrupulous attention—in classrooms and training sessions, in meetings and conventions, in the magazines and journals of the field. More stories by more writers of "how I composed this" could prove inspiring as well as instructive, highlighting the unlimited ingenuity and ethical sensitivity that brings us to a suitable sense of style.

On the Cover



To answer the Society for Technical Communication's call for covers that "[rethink] audience and users in technical communication," we designed a graphic that contrasts a stereotypical view of audience with a more realistic, inclusive view. Our graphic features glasses that focus certain words within the frame to demonstrate a clearer view when audience is reconsidered. The two lenses of the glasses highlight audience diversity and the context in which the audience receives technical writing. Our research indicates that as technical communication grows, communicators will effectively connect with their readers' different backgrounds and needs by addressing this diversity and context. The words within the lenses answer questions about audience characteristics and thus are keys to maintaining a connection to the audience. Drawing inspiration from previous successful covers, we used Paint.NET to create a simple and engaging design. We methodically selected representative words that were specific and accurate. The cover we propose here demonstrates the clear view that audience is changing before our eyes.

About the Artists

Jaime Renman is an undergraduate student at the University of Delaware. She is pursuing a Bachelor of Arts degree in Public Policy with minors in Biology, Public Health, and Spanish. She hopes to bridge these academic studies and passions by working in the field of public health to create health policy that addresses health disparities. She can be reached at jrenman@udel.edu.

Larissa Gaul is an undergraduate student in University of Delaware's environmental engineering program. She is focusing on water quality and resources, with a minor in environmental policy. Her studies use technical writing and other engineering skills to develop solutions for issues like water contamination and shortages. Larissa also participates in research on various environmental topics. She can be reached at larsagul@udel.edu.

Identifying Risk Communication Deficiencies: Merging Distributed Usability, Integrated Scope, and Ethics of Care

By Amber Lancaster

Abstract

Purpose: Risk communication research examines how people communicate risk to prevent accidents and fatalities. Past studies have analyzed risk communication effectiveness from one of two frameworks: a textual approach (meaning is in the text) or a socio-cultural approach (meaning is external to the text). Some studies have merged textual and socio-cultural approaches, yet none to date have merged both approaches with an analysis of usability and ethics, specifically. A more useful analysis would combine such approaches to examine the broader system that makes up risk communication, using distributed usability and what Spinuzzi (2003) called “integrated scope” with a lens on ethics.

Method: I examine existing frameworks used to analyze risk communication and offer a merged framework emphasizing distributed usability, integrated scope, and an ethics of care philosophy for identifying communication deficiencies. I use archival research to retrace a historical case of how artifacts were used in a communication system at an industrial setting when a fatal explosion occurred.

Results: I use this historical case analysis to show that a merged framework with distributed usability, integrated scope, and an ethics of care philosophy provides a more comprehensive and concrete approach for identifying risk communication deficiencies and preventing injuries and fatalities.

Conclusion: Examining complex work systems through this new merged framework expands our understanding of the interplay between textual-level components of our information (placement, accuracy, and details) and the social/cultural/political environments that define how workers act. Practitioners and researchers can apply this new merged framework to analyze past and current risk communication systems to identify usability deficiencies and prevent accidents.

Keywords: risk communication, complex work systems, distributed usability, ethics of care

Practitioner's Takeaway:

- Existing frameworks for assessing risk communication deficiencies emphasize both textual-level analyses and socio-cultural-level analyses, but not with a usability and ethics perspective combined.
- A new merged framework based on distributed usability practices can help identify deficiencies at both levels of analyses across a complex workplace information system.
- As part of the merged framework, an ethics of care philosophy provides practitioners an ethical lens to examine how identified risk communication deficiencies affect target users and the relationship between the various groups of people using technical information.

A Merged Framework for Identifying Risk

Introduction

Risk communication is a subfield of technical communication that focuses on the discursive practices involved in the communication of health, safety, and environmental risk. Risk communication motivates an audience to act in a desired way; specifically, it draws attention to risky behaviors to prevent injuries and fatalities. Technical communication practitioners who develop risk communication identify risks in workplace settings and train employees to avoid and respond to dangerous and hazardous situations.

Risk communication has generated scholarly interest for practitioners and researchers of technical communication since the mid 1980s. During the 1980s and 1990s, scholars in technical communication began investigating discursive practices in risk communication, but not with the focus on usability and ethics, specifically. For instance, early research in technical communication primarily addressed laws that mandate risk communication and liability concerns for technical warnings, instructions, and safety information (Bedford & Stearns, 1987; Croft, 1996; Helyar, 1992; Manning, 1982; Smith, 1990; Smith & Shirk, 1996; Strate, & Swerdlow, 1987; Velotta, 1987). Research focused primarily on how technical communicators could improve written documentation to meet required laws—a focus that has continued in more recent research on liability and Right to Know laws (Batova, 2013; Hannah, 2010; Moran, 2012; Todd, 2014). In other earlier research, technical communication scholars investigated and published on communication failures of specific incidents, such as the *Three Mile Island* disaster in 1979 (Herndl, Fennell, & Miller, 1991) and the *Challenger* accident in 1986 (Dombrowski, 1991, 1992, 1995, 2000; Moore, 1992; Pace, 1988; Winsor, 1998, 1990). Yet, other scholars researched risk communication within specific industries, such as the transportation industry (Coogan, 2002; Dragga & Voss, 2003; Horsley & Barker, 2002) and the mining industry (Sauer, 1992, 2003). Furthermore, other scholars in technical communication examined risk communication issues in environmental health and public policy, including earlier works of Katz and Miller (1996), Grabill and Simmons (1998), and Waddell (1996), and more recent works of Simmons (2008) and Youngblood (2012).

Recent research on risk communication serves to prevent disastrous workplace accidents, but much of

the existing research uses one of two frameworks—either usability or ethical effectiveness—but never specifically puts the two together for a more comprehensive and productive analysis. I aim to address the need in scholarly research on risk communication to merge these two frameworks. I first identify and explain existing methodological frameworks for analyzing risk communication; then, I offer a merged methodological framework to analyze the usability and ethical effectiveness of risk communication. I apply this merged framework to the risk communication system at Ford Motor Company, the Rouge Steel Complex, where a tragic incident resulted in several serious injuries and fatalities in 1999. Examining this historic case from a distributed usability and ethics framework extends our field's existing research on risk communication, but also contributes new insights into how we, as technical communicators, might assess the usability and ethical effectiveness of risk communication, together, within a complex work system.

Existing Methodological Frameworks in Risk Communication

Technical communication researchers have studied risk communication in two primary ways: (1) examining the textual level of documents to assist technical writers in creating lawful, ethical, and effective documents; a textual-level approach to assessing risk communication sees the “meaning” in the text; and (2) examining the socio-cultural level to understand differences in discourse across several workgroups and the influences of meaning and decision-making processes. This approach to assessing risk communication sees the “meaning” as external to the text and as socially constructed by those who use it. The following section identifies past methodological frameworks used to study risk communication.

Textual-level Approaches for Assessing Risk Communication

Textual information within risk communication was aimed to address U.S. laws and liability issues; thus, content was prescriptive to meet laws and prevent liability.

Honing just textual information, however, technical communicators faced over-simplifying technical meaning. As a solution, Manning (1982) offered a framework called “the persuasion matrix” that outlined

five primary considerations for risk communication: “destination, source, message, channel, and receiver” (p. 302). Additionally, Manning (1982) suggested that the matrix overlapped with common rhetorical principles: “identification principle,” “action principle,” “familiarity and trust principle,” and “clarity principle” (p. 302). This more simplified writing model was designed to assist technical writers in preparing materials for risk communication. Manning’s formula, “Action,” “Credibility,” “Target,” “Identification,” and “Readability” (ACTIR) (p. 303) was an assessment tool used for creating risk communication. ACTIR foregrounded the audience and focused on a text’s messages, rhetorical structures, and the message and structures’ ability to convince readers to act in certain ways.

Other scholars have also examined textual-level content for deficiencies in risk communication. Like Manning, Croft (1996) identified ways that technical communicators can simplify writing and reading processes, improve technical information in risk communication, and offer action-based communication. In the context of Material Safety Data Sheets (MSDS), Croft criticized efforts by the U.S. Occupational Safety and Health Administration (OSHA) to create risk communication standards with no guidance on presenting technical information. According to Croft (1996), “Instead of receiving complaints from workers that they did not receive enough information about the hazards of their workplace, there were complaints of getting too much seemingly irrelevant information” (pp. 172–173), pointing to a need for usability and accessibility assessments.

To help alleviate some of the deficiencies identified, Croft (1996) argued that government agencies must implement clear and explicit writing standards for entire industries. He provided a framework to help technical communicators write consistently across industries that dealt with hazardous materials and risky situations. Croft’s framework included four fundamental sections:

- a description of the material and crucial information that may be needed immediately when an accident occurs,
- an action plan, should a hazardous situation arise,
- a prevention plan to avoid hazardous situations from occurring, and
- additional useful information about the material. (p. 173)

This framework, according to Croft, “assist[ed] the MSDS writer in laying out the information to answer the four fundamental questions,” and “[w]hen readers have the answers to these basic questions, they have the information needed to use, handle, store, and transport the material appropriately” (p. 176). This framework suggested that meaning was in the text and contained in a single textual artifact (i.e., the document provided users with what they needed to complete tasks safely). This framework did not, however, address risk communication situated in a larger complex work system; rather, it emphasized an isolated piece of information.

Socio-cultural-Level Approaches for Assessing Risk Communication

Unlike textual-level approaches to risk communication, socio-cultural-level approaches examined several factors that are external to specific documents and that influenced organizational discourse (the role of discourse in social practices and organizational dynamics). This approach was more commonly used to examine risk communication in our field. For instance, several technical communication scholars have looked at organizational discourse and communication failures to analyze risk communication deficiencies. Research through this kind of framework has included discussions on disastrous incidents to illustrate how information is created, disseminated, and perceived by different groups of people within the same organization or among collaborating organizations. Two widely examined incidents include the *Three Mile Island* disaster of 1979 and the *Challenger* accident of 1986. These incidents were examined to explain why and how failed communication contributed to fatal accidents.

Existing literature on organizational discourse in risk communication argued that further research will increase our understanding of communication patterns among workgroups, which can be applied to improve communication and prevent future accidents. As a case in point, in their discussion on the accident at *Three Mile Island* and the *Challenger* disaster, Herndl, Fennell, and Miller (1991) stated,

Both these technological disasters involved failures of communication among ordinary professional people, mistakes committed in the course of routine work on the job, small mishaps with grotesque consequences. [...] But disaster makes otherwise routine and

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invisible communication accessible, and disaster makes the study of it compelling. (pp. 279–280)

Herndl, Fennell, and Miller (1991) justified the study of “discourse behind the disaster” to see if communication patterns differed among “lines of social (organizational) structure” (p. 281). In their study of both the *Three Mile Island* and the *Challenger* disasters, they used a four-point framework to conduct organizational, linguistic, pragmatic, and argument analyses. They concluded that two distinct communication failures occur in organizational discourse: miscommunication and misunderstanding. They stated,

Miscommunication is detected through the structural analysis and is due to the lack of common language or to faulty communication procedures within an organization. Misunderstanding is detected through substantive analysis of what people say or write and what they must share to interpret discourse as it was intended. Put simply, miscommunication revolves around the *how* of communication, while misunderstanding revolves around the *what*. (Herndl, Fennell, & Miller, 1991, p. 303)

Here, they pointed to two critical areas in organizational discourse that might explain why communicative disconnects can occur between groups of people within workplace settings.

Similarly, Dombrowski (1991, 1992, 1995, 2000) and Winsor (1990) have addressed communicative disconnects in their investigations of the *Challenger* disaster. Their examinations of the technical reports and correspondence between scientists, engineers, and managers leading up to the event revealed clear disconnects between technical information and how knowledge was applied, disseminated, and perceived. Dombrowski (2000), for instance, stated that the investigations of the *Challenger* “demonstrate[d] the critical importance of clear communication in highly technical systems such as the shuttle, the powerful role of complex social forces in shaping communications, and the close interplay between values and language in communications” (p. 121).

Dombrowski also added to this argument a real concern for and understanding of how ethics played out in the communicative events between social groups. He stated, “They [the investigations] show, too,

how ethical responsibility can be reflected in highly technical documents. Tragically, they also illustrate how differences in organizational power can negate even the most ethically responsible of technical communicators” (Dombrowski, 2000, p. 121).

Like Dombrowski, Winsor (1990) addressed ethics in the *Challenger* case when she stated, “[F]uture failures could be prevented only by removing unethical or incompetent employees—in effect the action which NASA and MTI both eventually took” (p. 7); however, Winsor further stated that communication about the O-ring failures in the *Challenger* case extended beyond concrete ethical decisions and demonstrated “the difficulty we [technical communicators] have in bridging our theoretical understanding of the uncertain, socially conditioned nature of discourse to bear on concrete incidents” (p. 8)—a key notion for a more concrete framework to assess risk communication at both the textual level and socio-cultural level with a lens on ethics and usability.

Both Dombrowski’s (2000) and Winsor’s (1990) examinations of organizational discourse central to the *Challenger* disaster emphasized a socio-cultural theoretical framework and the need for further research about communication patterns, applied ethics, and social structures in the area of risk communication, but neither emphasized usability assessments as part of their frameworks. A more complete framework should also merge distributed usability across complex work systems with applied ethics to examine concrete aspects of our work.

Well-known disasters like the *Three Mile Island* and the *Challenger* accidents were focal points for studying risk communication to explain how and why communication failures occur, but scholars have also studied risk communication in the public sphere to examine the what, or the meaning of words constructed by various social groups and how those groups contend for meaning.

Coogan (2002), for instance, researched how organizational discourse in the railway industry affected public safety and how meanings are constructed and construed. In his investigation of the Chicago Transit Authority and railway accidents between 1976 and 1984, Coogan attributed failed communication among different social groups as the primary cause in railway accidents that resulted in fatalities (p. 277). Coogan claimed that the fields of rhetoric and

technical communication must address communication needs and the public concern. He stated that “the safe operation of mass transit is an issue that not only concerns technical communicators but citizens, politicians, and engineers alike” and that “a rhetorical analysis of accidents should proceed from sources that name the public concern” (p. 280). At the basis of his argument, Coogan called for the study of ideographs to understand both the how and why communication failures occur, and to understand the what, or the specific meaning of words that social groups develop, use, and compete to own.

Perhaps the most prominent work in risk communication studies, Sauer (1993, 2003) investigated the role of communication in mining industries. Sauer’s work is one of the few that more deeply employed the textual-level approach and the socio-cultural-level approach to study and assess risk communication. In *The Rhetoric of Risk: Technical Documentation in Hazardous Environments* (2003), Sauer used a rhetorical framework to analyze content and context of specific documents like memos between members of the same and different workgroups. She also addressed the cycle of technical documentation in large regulatory industries, drawing attention to the larger systemic context in which information works. She examined how technical communication portrays the following topics:

- The dynamic uncertainty of hazardous environments
- The variability and unreliability of human performance
- The uncertainty of the agency’s notion of “premium data”
- The uncertainty in social structure and organization
- The rhetorical incompleteness of any single viewpoint (p. 19)

Though broad in scope, these topics have revealed the need to investigate risk communication with both a textual-level and socio-cultural-level analysis. Sauer’s work also revealed a growing concern for technical communicators to understand the complex interrelations between language use at the textual level, groups of workers at the socio-cultural level, and the contextual contingencies that shape risk communication. Furthermore, Sauer’s adoption of a feminist ethics of care illustrated the need to consider

the applied ethical responsibilities of information and the caring of relationships of those impacted by such information. But Sauer has not combined usability assessments, specifically, with her analyses.

In more recent studies, some scholars emphasized moving beyond textual-level approaches to consider the rhetorical context (Cox & Pezzullo, 2015; Youngblood, 2012). For instance, Youngblood (2012) examined ambiguity and avoidance strategies in risk communication produced by community emergency planning committees, where miscommunication, misinformation, and ambiguous information within organizations could cause potential failed risk communication involving the public. As she pointed out, however, oftentimes, the complex social rhetorical situation may not afford technical communicators the ability to fully disclose technical information. She stated:

As advocates for the public, technical communicators’ first responses may be to argue for explicit details in RTK [Right-to-know] information. That approach would be in keeping with a traditional disciplinary focus on completeness. But such a response is complicated by real and perceived security threats and emergency planners’ need for a sense of control over their situations. (2012, p. 59)

To assess what information technical communicators publish, Youngblood (2012) offered a three-tiered framework for decision making—asking questions first “about the organization’s goals;” second “that identify rhetorical tensions;” and third “that explore levels of detail as they relate to civic participation, problem solving, and ethics” (p. 59).

Like Youngblood, Cox and Pezzullo (2015) illustrated cases where the challenges of risk communication go beyond the textual meaning in which technical communicators must produce risk communication that considers cultural values (p. 163). Cox and Pezzullo (2015) offered a framework for analyzing environmental risk communication in the public sphere based on two sub-structures: “the technical model of risk communication” and “the cultural model of risk communication” (pp. 159–165). Their technical model shared technical information with a targeted public audience with three goals in mind—to inform, to change behaviors, and to assure

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the public of their safety. Cox and Pezzullo argued, though, that this technical model often fails to acknowledge the concerns of individuals (and multiple groups of people) who make up that public (pp. 161–162)—hinting to a need for an ethics of care lens. Their cultural model, however, took into account individuals and involved them in the processes of assessing and communicating risk as they experience a risky situation (pp. 161–162)—hinting to a participatory, or co-creation, role, which is also one premise of usability evaluation methods.

Within each of these existing frameworks are both practical and theoretical approaches for understanding, producing, disseminating, or analyzing risk communication. However, a single, merged framework is needed to bring together the textual and the socio-cultural levels of analysis with a more concrete ethical understanding for those who use the technical information. Such a merged framework would also evaluate usability issues in technical information, but assess risk communication effectiveness at a level that is distributed across social, cultural, and political lines in a complex work system. This distributed usability assessment would integrate textual-level, socio-cultural-level, and ethical analyses to identify risk communication deficiencies and prevent injuries and fatalities.

A NEW Merged Methodological Framework for Studying Risk Communication

A new approach for assessing effectiveness of risk communication might be derived from usability evaluation—specifically, looking at how meaning is distributed across multiple artifacts (texts and interfaces) and how meaning exists in the interplay of artifacts, groups of people (users), and the ethical concerns surrounding social, cultural, and political spheres (invisible fields).

Typically, usability evaluation examines the textual-level of a document to identify where information fails to provide users with adequate breadth and depth to complete tasks. However, usability evaluation can also account for social, cultural, and political factors that influence the effectiveness of a text. Thus, usability as a method can offer technical communicators a way to analyze both the textual and socio-cultural levels of risk communication effectiveness.

One possible framework includes examining artifacts (texts and interfaces) and their connectedness through organizations. This method is primarily associated with Clay Spinuzzi's (2003) research and has been applied to assess the design of workplace systems and the effectiveness of artifacts within a system to support workplace tasks. Unlike more traditional usability testing, Spinuzzi's approach of integrated scope examines usability beyond an artifact in isolation. His approach identifies usability problems at three levels of scope: the micro, meso, and macro levels.

Oftentimes, according to Spinuzzi, usability evaluation takes on the designer-as-hero trope, in which workers are portrayed as victims of usability problems and designers are depicted as heroes who save workers by identifying design problems, fixing them, and improving the worker's ability to complete job-related tasks. Under this usability framework, as Spinuzzi stated, "Once the crux of the problem is treated via a formal solution, the symptoms of the problem dissolve," but as he has further questioned, "What if the usability problems cannot be neatly divided into cause and symptoms?" (2003, p. 26). For instance, in a complex workplace system, several factors external to the artifact influence its usability and impact a worker's ability to complete tasks. Factors about the work system (such as structural, social, cultural, and political characteristics) influence usability within the system. To truly identify usability problems within a complex workplace system and to improve the system based on usability evaluations, designers must look at the scope of use at various levels within the work system—they must look at usability distributed across multiple artifacts and within the system itself. According to Spinuzzi,

Workers' operations must be examined in their own right, as interactions—often centrifugal, subversive interactions—that coconstitute (reciprocally make up, shape, sustain) the cultural activities and goal-directed actions in which workers engage. At the same time, we [designers] must also examine work activities and goal-directed actions, where workers may also innovate. In short, to examine the centrifugal aspects of workers' labor, it becomes important for us [designers] to *integrate research scope*: to examine the three levels [micro, meso, and macro] of activity, actions, and operations so that we can discern how they interact, how the

coconstitute each other, and how innovations at any given level affect the others. (2003, p. 27)

In this passage, Spinuzzi identified distributed usability evaluation within the context of a complex workplace system. He suggested that rather than designing simply task-oriented artifacts to support work goals, technical communicators must design task-oriented artifacts situated in the context of various scopes.

As an example, to evaluate a procedural documentation that provides step-by-step instructions for mechanical operation, designers cannot assess usability effectiveness in isolation. They must identify how the document's use is situated in the work system—how it interacts with or relies on other documents, how it operates within the political structure of the workplace, and how it alters or is altered by workarounds and worker innovation.

At a micro-level, designers might look at textual features of the document, such as placement of information, accuracy of information, or level of detail to complete tasks. They might look for information deficiencies where steps are missing or where users get confused.

At a meso-level, designers might look at the actions that workers perform with the use of specific tools. They might look at the user's reliance on tools to operate mechanical elements of an object (for instance, a boiler). Designers might, then, identify these actions as links to the procedural documentation, noting the ways that users set goals, approach the task, and complete it. They might also observe the kinds of problems users encounter within the action and goal.

At a macro-level, the designer might look at the cultural and political activities that shape actions. This level “involves ways workers, work communities, cultures, and societies understand, structure, collaborate on, and execute their evolving cooperative enterprises” (Spinuzzi, 2003, p. 32). Designers, then, might look at how different workgroups use the mechanical operation's procedural documentation, but also how different groups contribute to the use of that documentation within the larger context of workplace actions.

Though Spinuzzi emphasized designing task-oriented artifacts situated in the context of micro, meso, and macro-levels, ethics was not integrated at each level of analysis. To fully assess the usability effectiveness of risk communication, technical communicators

must examine, at each level, the ethical concerns for information use. At the micro-level, designers look at legal information and ethical responsibilities conveyed within the textual information to protect users. At the meso-level, designers examine ethical issues with access to information and barriers to meeting compliance. At the macro-level, designers examine where ethical responsibilities of information exist within the social, cultural, and political relationships of groups of users. At all three levels of scope, concerns for information use are bound to users and relationships across groups of people—a central premise to an ethics of care philosophy.

Adding an Ethics of Care Lens to Risk Communication Analyses

Under an ethics of care philosophy, “The right decision is not about an individual's own needs or desired outcomes, nor is the good decision about an individual's obligation or duty to a set standard or governing rule. Rather, the best decision is uniquely tied to relationships that bond two or more individuals” (Lancaster & Tucker Lambert, 2015, pp. 295–296). The bonding relationships between people make especially important the effects of risk communication in risky environments. In risky environments where miscommunication or mishaps can lead to injuries and fatalities, the bonding relationships between workers are crucial to everyone's safety.

Applying an ethics of care philosophy to risk communication, technical communicators gain an approach that places care for others and relationships between people as central to decision making. As an added layer to distributed usability and integrated scope, then, an ethics of care analysis emphasizes what Noddings defined as “receptivity, relatedness, and responsiveness” (as cited in Dombrowski, 2000, p. 64). An ethics of care analysis of risk communication would examine how work groups share ideas, offer suggestions, and make decisions about the workplace tasks and information supporting those tasks.

Additionally, according to Willerton, “The concept of care gives technical communicators another way to examine—and reaffirm—the relationships between their companies and their audiences and to consider the many ways in which those relationships manifest” (2015, p. 51). Within a workplace system of many stratified units of workers and information, an ethics of care lens provides a sensible way to analyze ethical responsibility to the groups of users and the relationships that bond them.

A Merged Framework for Identifying Risk

Using the New Merged Framework: A Case in Context

Merging and using distributed usability, integrated scope, and an ethics of care philosophy as a single framework to evaluate risk communication offers a more comprehensive and richer context than past frameworks have offered. A merged framework with these three foci help technical communicators more fully understand factors that influence the use of risk communication to prevent injuries and fatalities in the workplace.

To show how this merged framework can be used to better identify risk communication deficiencies, I examine a historical case study, a boiler explosion at Ford Motor Company's Rouge Steel Complex in Dearborn, Michigan (Detroit metro area). I show how distributed usability, integrated scope, and an ethics of care philosophy provide more comprehensive insight to evaluating risk communication effectiveness, but also how such an approach provides understanding of the complexity of workplace communication systems in an industrial organization (a manufacturing plant). I emphasize how usability research and ethics combined contribute new analyses of risk communication. Such analyses assist in improving how organizations design, implement, and use documents to prevent accidents in risky environments.

Ideally, distributed usability research should involve primary research, such as usability testing, ethnographic observations and site visits, and focus-group interviews; however, because of the highly sensitive nature of this case (which is so often true in disastrous accidents), I was limited to reconstructing the events of the accident, the communication system, and the work system through archival documentation and sample artifacts in the Michigan Occupational Safety and Health Administration (MIOSHA) report. I solicited information from MIOSHA officers assigned to the investigation, reporters who covered the accident, and Ford Motor Company, with little response. Although conducting primary research was not possible, the historical artifacts and the narrative of MIOSHA's investigation (a compilation of more than 1,000 documents) adequately supported identifying deficiencies in the work system, at all three levels of scope, that led to the fatal explosion. I retrace the MIOSHA investigation and classify MIOSHA's findings in the context of a workplace communication system (something the MIOSHA report did not accomplish).

The following sections cover the background of this case study, provide historical context of the accident and political context of the work system, and devise a picture of risk communication deficiencies using a merged framework of distributed usability, integrated scope, and an ethics of care philosophy.

Case History

On February 1, 1999, a boiler exploded at the Ford Motor Rouge Steel Complex, igniting five floors of the complex, fatally injuring six employees and critically injuring more than a dozen others. Photos (distortions in originals) taken at the site by MIOSHA (see Figures 1 and 2) documented the extensive damage resulting from the explosion.

According to the Michigan Department of Consumer & Industry Services (CIS), “[the Michigan Occupational Safety and Health Administration (MIOSHA) and the Bureau of Construction Codes (BCC)] determined that the explosion was caused by a natural gas build-up in Boiler No. 6,” and “BCC inspectors concluded that the cause of the accident was a result of inadequate procedural controls for the safe shut-down of the boiler” (State of Michigan, 1999, Ford)—deficiencies that, during my research process, I classified as textual-level in the technical instructions for shutting down the boiler. Additionally, CIS concluded that “[i]mproper valve line-ups and inadequate work group communication allowed natural gas to flow into the boiler furnace chamber. This is believed to be the source of the gas build-up which caused the explosion” (State of Michigan, 1999, Ford)—deficiencies that I classified as social/cultural/political in the actions people performed and the miscommunication between those people.

Though this accident sadly bears similarities with many other reported workplace accidents, its case marks several historic outcomes. First, it marks a historic settlement between an auto corporation, union organizations, regulatory agencies, and Ford Motor Company employees at this point in time. The CIS stated, “The settlement includes a record \$1.5 million penalty, the largest monetary sanction ever levied in Michigan as a result of a MIOSHA investigation” (State of Michigan, 1999, Ford). Furthermore, the settlement marked a historic effort from involved organizations to extend the scope of the agreement beyond the immediate case and included five other monetary sanctions, totaling \$7 million. These included:

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The damage to the Ford Rouge power house from the Feb. 1, 1999, explosion.

Figure 1. Reproduction photo of Ford Motor Rouge Steel Complex building after explosion, courtesy of MIOSHA

- \$1.5 million for establishing programs to achieve lasting improvements in safety
- \$1.0 million for research to increase understanding of industry safety and health
- \$1.5 million for medical research, facilities or equipment in the treatment of burns and other critical care
- \$1.0 million for scholarship funds
- \$0.5 million for potential third-party reimbursement (State of Michigan, 1999, Ford)

Additionally, the MIOSHA investigation became one of the most complex and high-profiled cases in the state of Michigan at its time, lasting more than



MIOSHA General Industry Safety Officers enter the Ford Rouge power plant after the explosion.

Figure 2. Reproduction photo of MIOSHA inspectors on site at Ford Motor Rouge Steel Complex building after explosion, courtesy of MIOSHA

seven months, involving the largest number of agencies and organizations, and requiring the largest review of information (including interviews with employees, material evidence from the physical structure, and in-house documentations) (State of Michigan, 1999, Ford). According to CIS, the Ford investigation involved the largest number of physical documents ever reviewed; it included “689 blueprints; 324 binders of documents containing more than 200,000 pages; 29,000 photos; and 375 boxes of evidence, including material in 10 file cabinets and 20 blueprint file cabinets” (State of Michigan, 1999, Ford). Lastly, this case was a leading story in news coverage and was controversial among several communities in the Detroit metro area, drawing attention to the effects of failed risk communication beyond those immediately involved.

These outcomes make the study particularly interesting to our field, because they mark a historic effort dedicated to investigating large volumes of technical communication, from instructional manuals, technical descriptions, policy and procedures, training manuals and materials, employee interviews, and other corporate documents. This case highlights a truly complex information system and an especially egregious

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case of corporate ineptitude where corrective actions to improve technical communication were sanctioned with monetary penalties.

Context of the Accident

The following narrative is based on CIS (State of Michigan, 1999, Ford) and MIOSHA documents from the investigation (State of Michigan, 1999, Job) and offers contextual insight to what happened on the day of the explosion.

In 1999, the Ford Motor Rouge Steel Complex in Dearborn, MI covered 1,110 acres, accommodated six Ford manufacturing companies and the Rouge Steel Company, and employed approximately 10,000 workers. The powerhouse generated electrical, natural gas, and steam power for manufacturing operations and contained seven high-pressure power boilers used to provide steam at the complex. All boilers were in the same building. At the time of the 1999 explosion, Boilers No. 2, 3, 4, 5, and 7 were operating, and Boilers No. 1 and 6 were being shut down for annual inspection and maintenance. At 8:00 am on the day of the explosion, powerhouse employees began shut-down procedures for Boiler No. 6. At 12:00 pm, workers were completing the shut-down process by blanking (capping off) the natural gas supply. At about 12:45 pm, the natural gas control valves were opened to facilitate purging any remaining natural gas from the supply lines through the boiler. At approximately 1:00 pm, Boiler No. 6 violently exploded from a gas build-up, igniting five floors of the facility. Investigators determined that the operators were inadequately trained, but also failed to properly align the valves because of poor equipment markings, which resulted in the gas leak that led to the explosion.

Six employees were killed in this accident: John Arseneau, 45; Donald Harper, 58; Cody Boatwright, 51; Ken Anderson, 44; Warren Blow, 51; and Ronald Moritz, 46; each leaving behind family and children. Several others were critically injured and suffered severe skin burns and damage to vital organs; among them were Ralph Irvin, 53; Gerald Nyland, 47; John Sklarczyk, 47; Gerald Moore, 55; Dennis Arrington, 47; Vincent Fodera, 46; Chris Getts, 46; John Kucharski, 40; and Geremia Villatala, 64. All of these individuals were diagnosed with a 50/50 chance of survival by physicians at the University of Michigan hospital where they were treated (McLaughlin, 1999). The tragic loss of life and life-impacting injuries among so many employees

foregrounds the critical role risk communication plays in industrial settings. Usable and effective risk communication might have prevented these tragedies.

Social, Cultural, and Political Context of the Work System

Research from the MIOSHA investigation and from news coverage on this case indicates that the political context of Ford's work system played a role in communication deficiencies. For instance, though Ford Motor Company developed an ideal system for communicating mechanical failures and work orders, this system proved insufficient across workgroups within the plant—some powerhouse workers were unaware of communication procedures, some were aware of a few procedures, but did not know how the system worked; and some used the system properly, but their requests went largely unanswered by supervisors or employees across departmental lines.

As an example, at the time of the explosion, employees were to complete an operator's notice slip and receive approval from a maintenance supervisor and service operator prior to carrying out maintenance on any mechanical or operational system. Also, any employee encountering mechanical failures or discovering potential failures was to report those failures for critical repairs. However, several powerhouse workers noted in interviews with MIOSHA that on many occasions their safety notices and complaints were not addressed, and that failures in communication occurred between different workgroups within the work system. Specific to the boiler explosion, Ford employees told *Detroit Free Press* reporter Narji Warikoo that three of the six men who died had previously filed health and safety complaints about the conditions of the boiler; however, their complaints were largely left unanswered (White, 1999). In an interview with Warikoo, one employee stated, "The work that was supposed to be done was not. The majority of maintenance people were getting teed off because they weren't getting overtime to do their jobs. [...] It was a big issue. You can't maintain that type of building with only eight hours of maintenance" (as cited in White, 1999). The picture painted by employees' testimony illustrated that power struggles existed across political lines within the organization: workers were overworked, under-compensated, and felt ignored. As one employee recalled, an incident in the autumn of 1996 occurred when a maintenance work order was

placed to fix a leaking warm-up line that warms up the turbines for the boilers, but the work order was never completed and supervisors never responded: “We put in recs [request for repairs], but they never got filled” (as cited in White, 1999).

The MIOSHA investigation confirmed communication failures across political lines existed within the organization with evidence “Health & Safety Complaint Form: NO. A 29945,” submitted by John Arseneau (deceased) on September 13, 1995, and “Health & Safety Complaint Form: NO. A 46293,” submitted by powerhouse workers Steve Patchuta and Matt Vanderboom on October 25, 1998. Arseneau’s hand-written request stated, “10-inch gas cocks are leaking on 1-3-5-6 Boiler. 2 Boiler. ADJUSTMENT REQUESTED: Needs to be changed” (State of Michigan, 1999, Job). However, examining the signatures of persons involved in the review and approval process, I verified that this communication request was ultimately ignored. The document included signatures from the district committeeperson and from Arseneau’s supervisor (dated September 13, 1995); it also included the request and signature from the superintendent (dated September 18, 1995) and the follow-up signatures from the district committeeperson and the UAW Health & Safety representative (dated September 20, 1995). But my review of the document revealed that the work order slip was never signed and approved by the company safety representative—the last person listed on the approval process. In fact, the MIOSHA investigator noted this deficiency and initialed the document, stating, “Who signed off? RJO 5-1-99” (State of Michigan, 1999, Job). Similarly, Patchuta and Vanderboom’s complaint was never addressed and documents were missing signatures from the district committeeperson and company safety representative on the last section of the review and approval process. Perhaps most chilling, Patchuta and Vanderboom forecasted a problem with inadequate training and job assignments among different classes of workers, which also contributed to the cause of the boiler accident. They stated, “This practice of assigning work which is traditional up-grade work to 2nd Class Opr’s [operators] including feed-pump job and engine room work with little to NO [all caps and underlining in original] training or orientation creates a hazardous situation and make a uncomfortable [*sic*] situation

for the 2nd Class Operators being assigned to 1st Class traditional work” (State of Michigan, 1999, Job). My review of the documents also revealed the superintendent’s disposition and the disagreement between employees and their supervisor; the superintendent stated, “The Power House supervision feels that the aggrieved employees have been properly trained. But if they feel that they need additional training, accommodations will be made to improve their confidence” (State of Michigan, 1999, Job).

The disagreement across political lines within the organization may also indicate communication deficiencies between workgroups and reveal critical areas in which employees and supervisors failed to “collaborate on, and execute their evolving cooperative enterprises” (Spinuzzi, 2003, p. 32). The ways in which different groups at Ford contributed to the use of health and safety documentation within the larger context of workplace actions shows little effort to support the “ideal system” that Ford had likely imagined.

Usability and Ethical Deficiencies Based on Integrated Scope

In my review of the MIOSHA report and investigation documentation, I identified six primary means at Ford to communicate about risk and the prevention of risk at the time of the explosion within the work system at the powerhouse. My review of the documentation reconstructed a communication work system, something that MIOSHA did not highlight as a systemic focus. The system largely consisted of written communication to disseminate information, to train employees on standard operating and maintenance procedures, and to regulate workplace activities and actions for the safety of all employees. These included the following:

- Training on code enforcement, regulations, and safe operating procedures
- Wall and machine placards and equipment identification numbers
- Danger tags and information tags
- Operator’s notice slip
- Operating and maintenance (O&M) procedures
- Operating and maintenance (O&M) checklists (State of Michigan, 1999, Job)

Each method of communication contributed to the ideal overall effectiveness of the risk communication system. For instance, training sessions and documents

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were designed to provide new employees with training on powerhouse procedures, including special operating training on equipment that the employees would handle and maintain. Additionally, continual training sessions for existing employees were designed to inform them about changes in operating procedures and to reinforce continual safe working habits in the powerhouse. Within the powerhouse, wall placards and equipment identification numbers were designed to identify machines by type, potential danger, and cross reference to the machine's manual. Danger tags and information tags were designed within the powerhouse to mark equipment failures or equipment that required service. When employees discovered a potential danger or equipment failure, they were to fill out a tag and attach it to the part or machine to notify other workers that the equipment needed repairs and might be dangerous to operate.

Operator's notice slips were designed to be used in conjunction with the danger and information tags. Once employees tagged the equipment, they were to complete the operator's notice slip by writing a brief narrative of what they encountered and when, the equipment failure, and the requested repair actions. Employees were then to submit the operator's notice slip to their supervisor, who then was to approve the request for maintenance and route the slip to the superintendent.

O&M procedures documented step-by-step procedures for carrying out specific actions. O&M procedures were designed to be presented to employees in training sessions along with O&M checklists that offered employees ways to ensure that they completed each step in the specified order. The O&M procedures and checklist were kept on site in the powerhouse for employee use.

To look at the overall system of risk communication, it would appear that Ford Motor Company provided employees with adequate training and information to carry out safe working procedures and to prevent accidents. Figure 3 illustrates how the ideal system would operate among workgroups and shows the interconnections and reliability across written artifacts.

As shown in Figure 3, written communication is central to the system's effectiveness. Through written documentation, employees would have accessed and created critical information to prevent injuries and fatal accidents in the powerhouse. Each form of written communication was connected to another, showing reliability across artifacts, which also suggested



Figure 3. Ford's ideal risk communication system

that effective usability was distributed among all parts of the whole.

For the system to achieve optimal usability effectiveness, artifacts and their use must be understood and consistent at the macro, meso, and micro levels. At the macro level (the social, cultural, and political activities shaping actions), all powerhouse employees would collaborate and routinely and properly use artifacts in conjunction with each other. As an example, the operator's notice slip would cross reference the danger and information tags, the wall placards, and equipment identification numbers, but would also facilitate communication and collaboration among workers and across political lines within the organization. The operator's notice slip would trigger communication between workgroups, and its cycle would end with the same person who initiated the action.

At the meso level (the actions that workers perform with the use of specific tools), artifacts would support actions multilaterally, linking goals to communicate and complete tasks, which would identify aspects like approximate time to complete the initial task, receive a response, and complete corrective action. In this ideal system, the operator's notice slip would state the date that an employee identified the problem and the dates that each person across workgroups received and reviewed the slip but also the approximate response time that was needed to correct the equipment and production.

At the micro level (the textual features of the document, such as placement of information, accuracy of information, or level of detail to complete tasks), artifacts would support step-by-step task completion. It is at this level that information must achieve adequate granularity and information to carry out tasks properly and safely. The O&M procedures and checklists, as

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examples, would provide employees with all necessary information to carry out specific tasks without questions about the text's purpose or meaning, without questions about parts of the text or larger process, and without questions about interrelated texts and tools.

At surface level, Ford's overall ideal system of risk communication would meet usability effectiveness; however, careful scrutiny of this system shows that their ideal system was not effective at all—not because the overall design lacked effectiveness, but because the ideal design was not what workers actually used in the powerhouse. The most striking difference was that employees were relying heavily on oral communication, as noted in MIOSHA's investigation, to complete tasks and communicate risks. Consequently, the system was deficient in all areas because written communication was not used effectively. Figure 4 illustrates identified deficiencies based on findings in MIOSHA's investigation.

Repeatedly, statements by investigators and by Ford powerhouse employees revealed communication deficiencies that existed across the overall work system. For instance, one MIOSHA investigator stated this about training: "During the course of the investigation[,] it was found that the training that was conducted in the powerhouse was generic" (State of Michigan, 1999, Job) and supported this claim with the following quotations from employee interviews (names were redacted by MIOSHA): "(Employee) stated in an interview that training was poor and there were few written procedures for the powerhouse;" "(Employee) stated in an interview he had never been trained in blanking procedures for boiler shutdowns;" "(Employee) stated in an interview he did not recall ever seeing a boiler startup or shutdown procedure. He stated there was a total lack of training; one had to watch and ask questions;" "(Employee) stated in an interview that he had training (number) years ago on boilers when he started with Ford. He had no training on boilers since. He stated he has had no classes in code enforcement, regulations, or in safe operating procedures" (State of Michigan, 1999, Job).

Because training on work procedures was inadequate, outdated, or too generic (as identified by MIOSHA), employees were using danger tags and information tags improperly. In some cases, employees knew that they should use tags, but were not aware of which tags to use or when to use them (as noted by MIOSHA). In other cases, employees were unaware that a tag system existed. MIOSHA's report stated,



Figure 4. Ford's actual risk communication system with identified breakdowns

According to multiple employees interviewed, it was discovered that some power service operators attached a danger or information tag with a string on the valve handle (Reference Book 3 Citation Documentation Tab D). No procedure was produced by Ford for when information tags were to be filled out or used. The practice of using tags was found to be inconsistent with regards to which tag was used, and if tags were used at all. (State of Michigan, 1999, Job)

The usability problems central to training show deficiencies at the macro level, when the larger work system across workgroups and political lines proved unsuccessful to properly communicate safety procedures. At this macro level, ethical responsibility to ensure people are equipped with the necessary information to support one another's safety was largely unaddressed. It also shows deficiencies at the meso level, where employees were not trained to know the goals and purposes associated with communication tools provided; thus, ethical and legal responsibilities for safety compliance were largely disregarded.

The practice of using the operator notice slips was also found to be inconsistent or misused, according to MIOSHA investigators. In some cases, employees completed the operator's notice slip correctly, but the slip was improperly routed across workgroups or never presented to the appropriate workgroups. The MIOSHA report identified inconsistent use and misuse of the operator's notice slip and also identified this as one of the major communication deficiencies that led to the boiler explosion. It stated,

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Ford had a system in place for requesting work to be performed on boilers. This was called an Operator's Notice Slip (Reference Book 8 Support Documentation Tab C). The slip was to be filled out by the maintenance department requesting operations to isolate the equipment on which they had to work. This system was put in place as a result of a near-miss in approximately 1992, involving two electricians working in a boiler. Natural gas was accidentally introduced into the boiler while employees were still inside. [...] The slip had a place for listing the equipment, the person making the request, date, and time of the request. It was then given to operations to complete the work request. Upon completion, it was to be signed by the power service operator(s) and returned to the maintenance personnel authorizing the work to commence. The request for Boiler #6 shutdown made by Ron Moritz, Maintenance Supervisor, was dated 02-01-99 and indicated the time of the request at 10:00 am. During the interviews, it was discovered one of the blast gas valves was closed on January 29, 1999. The other blast gas valve was closed on 02-01-99, at about 7:30 am. This indicated the shutdown was started and partially completed prior to the operator's notice slip requesting work to be performed. On the notice slip there was no signature of a power service operator indicating that Boiler #6 shutdown was complete. (State of Michigan, 1999, Job)

The MIOSHA investigating officer drew attention to the fact that work was partially completed before the power service operator reviewed and approved the work to be completed, showing that a proper inspection was not completed and that workers were not necessarily accustomed to the correct safety operating procedures. At a macro level, this usability problem reveals deficiencies across workgroups in a lack of communication and collaboration, and demonstrates that ethical responsibility to ensure people's safety was largely absent in the process. At a meso level, this usability problem shows lack of awareness of appropriate goals and tools used to complete actions, again identifying where safety compliance was unmet.

MIOSHA's report highlighted the need for adequate and specific operating procedures, training of those procedures, and carrying them out as identified in written communication. In one interview for instance,

Dave Johnson, Deputy Inspector, Boiler Division, stated "[I]t is prudent practice in the industry to have written startup and shutdown procedures where the boilers are operated; and that operators should be trained in these procedures." He further stated, "Valves, pilots, and burners on boiler systems throughout the powerhouse are not adequately identified as would be necessary to perform startup and shutdown operations." Here, the inspector indicated that Ford's written procedures were not standard in the industry and lacked references to equipment and parts of the equipment specific to boiler shutdown procedures. MIOSHA's report supported this notion, stating,

MIOSHA found that the written operating procedures provided by Ford Motor CO. were insufficient. The operating procedures from Babcock & Wilcox (Book 6 Support Documents Tab A – Instructions for the Care and Operation of Babcock & Wilcox Equipment) were generic and the employer had not modified the documents to make them site specific for the powerhouse. For example, no attempt had been made to relate equipment identification numbers to specific tasks. In addition, the generic tasks included equipment which had never been installed such as oil burners. (State of Michigan, 1999, Job)

At a micro level, these usability problems point to discrepancies in the text that could confuse users or mislead them to complete a task in the incorrect order or way. From an ethics of care perspective, textual-level inadequacies such as these could cause a user to feel less confident in the ability to perform the task (perceiving these as user inadequacies—placing blame on the user). Transferring the textual inadequacy and projecting it as a "user deficiency" was an underlying notion of the superintendent's comment about employees' confidence levels when he stated, "accommodations will be made to improve their confidence" (State of Michigan, 1999, Job). A perceived lack of confidence was emphasized by management (projecting user inadequacies) over providing training and domain-knowledge support (an ethical responsibility of management).

According to MIOSHA's report, inconsistencies in boiler shutdown were apparent, showing communication deficiencies at the micro level. The report stated,

During the course of the interview process, it was found that the lack of safe operating procedures for startup/shutdown of boilers created an array of inconsistencies. Variations were found in the sequential order in which the boiler was shutdown. In addition, it was found that variations existed for which valves were shutoff during the boiler shutdown. [...] During employee interviews, both supervision and hourly personnel explained variations as to which valves were closed during Boiler #6 shutdown. For example, some individuals stated natural gas valves on the second and third floor were shut off, while others stated that they only closed the second and third floor natural gas valves. (State of Michigan, 1999, Job)

Furthermore, copies of Ford's documentation for boiler shutdown reveal a lack of depth and granularity in the step-by-step instructions, but also show no specific references to equipment associated with the task (lacking the site-specific details noted by MIOSHA and that users need to safely perform their jobs). The 1974 instructional guide, "Procedure to Follow when all Blast Furnaces Go Down," which was still in use at the time of the explosion, consisted of nine steps and offered no diagrams or equipment identification numbers to help the user identify parts, such as valves involved in the shutdown, and was incomplete, as noted by MIOSHA. The steps listed were as follows (all caps were used in the original document):

1. CHANGE NEW PITS TO 100% NATURAL GAS.
2. CHECK NATURAL GAS SPILL IN AT K K BLDG. SET FOR 5 INCHES.
3. PUT ALL COKE OVEN BATTERIES ON COKE OVEN GAS UNDERFIRING.
4. CONNECT MONOMETER TO BLAST FCE. MAIN AT SPLIT WIND ROOM. RUN TO DISP. PANEL BOARD.
5. NOTIFY #1 POWER HOUSE TO CLOSE THREE MAINS, LEAVING ONE MAIN OPEN.
6. #1 POWER HOUSE CLOSE LAST MAIN DURING CAST OF LAST BLAST FCE. TO GO DOWN.
7. WATCH B.F. MAIN PRESS. WHEN IT STARTS BUILDING UP, OPEN BLEEDERS ON BLAST FCE.
8. BLAST FCE. GAS MAIN WILL BE FILLED WITH STEAM SPILL IN FROM FURNACES.
9. OPEN NAT. GAS SPILL IN (CABLE BY DISP. DESK) TO MAINTAIN 5 INCHES IN B.7. MAIN. (State of Michigan, 1999, Job)

A usability evaluation would have likely revealed problems with these instructions in several ways, but as one example, Step 4 could have been clarified by offering a diagram of the "Monometer" and where the connection occurs, or at the very least a cross reference to the part by its identification number on the machine. As another example, Step 7 could have clarified when the meter meets or exceeds "building up" by stating a range of pressure measurement, or by showing a diagram of the pressure valve with the pressure range highlighted in red. By providing more detail, more effective document design features, and more specific references to artifacts and parts of equipment, the designers could have created documents specific to the user's needs, which also could have prevented misunderstandings and errors that resulted in injuries and fatalities.

Another problem indicated that even if written documentation had met effective usability at a micro level, the communication system would have likely failed to prevent the accident from occurring: Ford had procedures for shutting down the boiler, but stored these documents in an office where powerhouse employees could not access them. MIOSHA noted,

Upon interviewing numerous employees[,] it was determined that they [the employees] had no knowledge of written Boiler #6 startup/shutdown procedures. Also, Ford had no checklist available for startup/shutdown indicating the proper sequence or listing of which controls and valves were to be operated. These conditions were brought to management's attention through internal and external audits. Recommendations to develop procedures were made as early as 1987 and up until 1998 (See documentation references section). (State of Michigan, 1999, Job)

Usability effectiveness was compromised because documents were not made available to or used by employees. Although Ford identified both the O&M procedures and checklist as part of the work system, it

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did not promote widespread use of these documents among workgroups. Consequently, though some employees were aware that shutdown procedures and documents existed, they were not provided with the documents to support completion of work tasks. One MIOSHA investigating officer supported this statement in his write-up of one employee's interview, noting "(Employee) stated in an interview that the boiler shutdown procedures were in the boiler room office, even though he had never seen them" (State of Michigan, 1999, Job). He further wrote that the employee was familiar with some artifacts used in procedural shutdown, such as the operator's notice slip, but the employee "did not know how the system worked" (State of Michigan, 1999, Job). Limiting access to procedural documentation cannot prevent injuries and fatalities; it demonstrates an egregious case of corporate ineptitude and a lack of ethics of care for the people affected by such gross negligence.

Conclusion

The MIOSHA investigation concluded that communication deficiencies were one of the primary causes leading to the boiler explosion, but offered no systemic analyses of the entire communication system. Technical communicators who work in areas of risk communication can offer this kind of specialized analysis.

Examining the system of risk communication using a merged framework of distributed usability, integrated scope, and an ethics of care philosophy revealed extensive deficiencies at all three levels of scope— aspects that designers could have examined to prevent the injuries and fatalities of the boiler explosion. At the micro-level, documents failed to provide the right amount and right kind of information. At the meso-level, employees were unaware of the goals and purposes of communication tools. And at the macro-level, employees were not collaborating, using, and sharing information among different workgroups. The training sessions on code enforcement, regulations, and safe operating procedures were inadequate, outdated, and generic. The danger tags and information tags were used inconsistently or not at all. The operator's notice slips were used inconsistently or incorrectly. The wall and machine placards and equipment identification numbers were not referenced in task descriptions. The O&M procedures were found generic, were

not displayed, or were not readily available. O&M checklists were not displayed or readily available, which resulted in improper step sequence. Consequently, the prevention of accidents was seriously compromised within the risk communication system.

Using distributed usability, integrated scope, and an ethics of care philosophy to assess risk communication effectiveness enables technical communicators to identify communication deficiencies within a complex work system, like that at Ford's Rouge Steel Complex in this historical 1999 case. This merged framework allows scrutiny at a textual level (micro level) and a social/ cultural/political level (macro level), but it also accounts for how the two levels intersect by goal-oriented actions supported by tool use in context (meso level) and how all three levels might incorporate an ethical lens.

Though an integrated scope framework has traditionally been applied to assess the design of work systems and to identify problem areas that could be improved, a merged framework, as I have offered, also lends itself to application in risk communication. Such an application accomplishes what Winsor (1990) called for: "bridging our theoretical understandings of uncertain, socially conditioned nature of discourse to bear on concrete incidents" (p. 8).

I have provided guidance on how technical communicators might use this merged framework to successfully examine risk communication in a broader context, as many scholars have suggested assessment of risk communication should (e.g., Dombrowski, 1991, 1992, 1995, 2000; Sauer, 1992, 2003; Winsor, 1988, 1990). Using this new merged framework will provide richer insights about textual features in context, social/ cultural/political meaning-making, ethical application, and approaches that technical communicators might take to understand and improve the use of risk communication documentation to prevent injuries and fatalities.

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Cognitive and Motivational Effects of Practice with Videos for Software Training

By Hans van der Meij

Abstract

Purpose: Software makers nowadays regularly post videos on their websites to satisfy their clients' need for instructional support. Some of these designs include an opportunity for practice. This study investigated whether the presence and timing of practice affected motivation and learning in video-based software training.

Method: An experiment is reported with four conditions: video-practice (VP), practice-video (PV), practice-video-practice (PVP), and video only (V). For motivation, the study assessed mood states and flow experience during training. In addition, task relevance and self-efficacy were measured before and after training. Learning was assessed with several performance tests for trained tasks. In addition, a transfer test was administered.

Results: The findings for presence of practice were mixed. Practice increased training time and led to more negative mood states during training. A clear advantage of practice was found only on the transfer test. The findings for timing of practice favored a sequence in which instruction preceded practice. Perplexing results were found for the PVP condition. The highest learning gains were expected for this condition, but, instead, this condition had the lowest performance scores on a practice test and immediate post-test.

Conclusion: This study indicates that the design issue of whether or not to complement video-based software training with practice is more complex than it seems.

Keywords: instructional video, software training, practice, motivation and cognition

Practitioner's Takeaway:

- The present study found mixed results for the presence and timing of practice in learning. Surprisingly, the lowest learning was found in the group that engaged in practice before and after video instruction.
- Designers may want to mitigate negative mood states of the user that emerge during practice (more than with video only).
- The study points out several advantages and disadvantages for deciding whether to include practice during training.

Practice with Videos for Software Training

Introduction

The development and distribution of instructional video (simply “video” from here on) for software training is rapidly increasing. This growth has been stimulated by technological advances, such as faster computers, better and cheaper video programs, and improved possibilities for distribution (Mogull, 2014). Thus, it is no surprise to find many videos on the websites of software makers, such as Adobe, Apple, IBM, Microsoft, TechSmith, and SAP.

The Adobe website for Premiere Pro tutorials can be used to illustrate what videos are on offer (Adobe, 2017, August 1). Figure 1 shows a section from the website’s homepage with access to five videos for beginners. Each video link shows a screenshot, a title and a characterization of user activity (i.e., “Watch” or “Try it”), and video duration. The website presents three different formats as possible ways to provide instructions about software usage in a video tutorial: *Embedded*, *Stand-alone View*, *Stand-alone Try-it*.



Figure 1. Screenshot of a section of the Adobe homepage for the website with Premiere Pro video tutorials for beginners

Figure 2 shows the embedded video for “Learn five editing basics in Premiere Pro.” In embedded videos, the website serves as the main user guide. It begins with a goal description and picture, and then states that there are five basic editing tasks that users should be able to perform. Thereafter, the website introduces the five tasks, with each task being numbered, titled, and described in a single sentence. The screenshot of the program interface gives access to the video with procedural information for each task.

Figure 3 illustrates the View variant of a stand-alone video. As in the embedded version, there is a title (e.g., “Quickly make expert color adjustments”) and a short



Figure 2. Screenshot of the embedded video “Learn five editing basics in Premiere Pro” on Adobe’s tutorial website

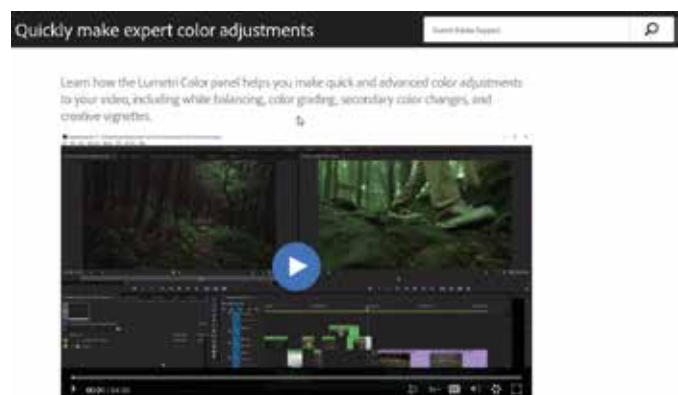


Figure 3. The start screen of “Quickly make expert color adjustments,” a View stand-alone video on Adobe’s tutorial website

description. In contrast to the embedded video, all user guidance comes from the video. The video includes conceptual and procedural information on the task.

The homepage for Premiere Pro tutorials also hosts a Try-it variant of a stand-alone video (e.g., “Enhance your project with video effects”). These videos closely resemble the View variant, the main difference being

the availability of practice files that allow the user to follow along with the modelled task performances. Before the video opens, the website draws the user's attention to the possibility of downloading practice files as opportunity for practice (see Figure 4). The video also mentions this possibility. As far as we have been able to establish, this approach is not unique for Adobe. TechSmith also complements its tutorial videos with links to practice files, and there are likely to be other software makers doing so as well. It is this coupling of video and practice that is focal in this paper.



Figure 4. The start screen of “Enhance your project with video effects,” a Try it stand-alone video on Adobe’s tutorial website

All video types consist of recorded demonstrations—a screen capture animation with narration. Beyond that, though, little is known about the design characteristics and effectiveness of the Adobe videos. The same applies to the videos produced by other software companies (compare Alexander, 2013; Morain & Swarts, 2012).

The videos from Adobe and other software companies serve the dual purpose of supporting task performance and learning. Recent research has proposed a theoretical model for constructing videos for software training that serves these aims. Empirical studies have established the effectiveness of video for software training based on this model (e.g., Brar & van der Meij, 2017; H. van der Meij, 2017; H. van der Meij & van der Meij, 2016; J. van der Meij & van der Meij, 2015). In these studies, there was a classic coupling of instruction and practice in which participants first viewed a video about a task and then engaged in practice of that task.

It was assumed but not tested that practice contributes to learning. Testing that assumption is the focus of this paper. The present study investigates whether the presence and timing of practice affects the outcomes of video-based software training. After a review of the literature, an experiment on practice in video-based software training is reported.

Research on the Presence and Timing of Practice

A literature search produced only one empirical study on video-based software training that manipulated the presence of practice. In her second experiment, Ertelt (experiment 2, 2007) presented participants with five videos about RagTime, a desktop publishing program. One group engaged in practice after watching each video while another group only viewed the videos. The findings revealed a significant but small effect of practice on learning on an immediate and a delayed post-test of the trained items. In addition, practice had a positive effect on a transfer test. The author suggested that the inclusion of practice stimulated users to engage in more active and deep processing.

In response to the virtual absence of empirical studies, we conducted our own experiment on practice with video-based software training (H. van der Meij, Rensink, & van der Meij, in press). The study involved videos on formatting tasks in Microsoft Word. There was one control condition in which the users could only view the videos (i.e., video only). There were two experimental conditions with practice, which varied in the timing of the practice (i.e., video-practice and practice-video).

One experimental condition included the traditional sequence of task instructions preceding practice. Complementing the video instruction with practice-after was expected to have two important advantages. One was that practice-after can deepen understanding by stimulating the user to (re)construct a procedure. Another was that practice-after can serve as a check of understanding and consolidate learning (compare van Gog, 2011).

The other experimental condition was designed to reflect the situation in which the user has first attempted to complete a software task and then turns to the video for support after failure or to check on the solution. In this condition, the contribution of practice was expected to be mainly motivational. Confronting the user with a practice task before providing task

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instructions should stimulate software exploration during practice. In addition, the practice was expected to increase the user's motivation for studying the video (compare Stark, Gruber, Renkl, & Mandl, 2000).

In short, it was expected that the presence of practice would enhance learning, and also that there was a higher learning outcome in the video-practice condition than the practice-video condition. These predictions were not confirmed. The video-only condition had learning outcomes comparable to those for the experimental conditions on various tests (i.e., immediate post-test, delayed post-test, transfer test). Also, the video-practice condition did not outperform the practice-video condition on these tests. The only significant difference found was on the practice test during training. On this test, the video-practice condition did better than the practice-video condition, achieving an average task performance success of 86% (up from 13% prior to training). What was surprising was that the practice-video condition also improved significantly, raising the participants' pre-test score of 14% to a practice test score of 45%. The increase was ascribed to the participants becoming acquainted with the interface, either from viewing a related task video or from exploring the interface during task completion attempts.

The design of our video-based software training is similar to a design approach that is known as the *worked example* strategy. Just as in our video research, worked example designs revolve around an ideal model of problem solving that is complemented with instructional features to enhance learning (Atkinson, Derry, Renkl, & Wortham, 2000; Renkl, 2014b; Sweller & Cooper, 1985). The effects of the presence and timing of practice has also been empirically investigated in worked examples research. The findings from this body of research are somewhat comparable to the outcomes found in our earlier video study. That is, several studies have found that example-only studying is equally as effective as practice-after. Many studies also found that practice-after is more effective for learning than practice-before (e.g., Leppink, Paas, van Gog, van der Vleuten, & van Merriënboer, 2014; Reisslein, Atkinson, Seeling, & Reisslein, 2006; van Gog, Kester, & Paas, 2011).

Research Design and Questions

The present study was designed as an extended replication of the earlier investigation of practice

in video-based software training. The present study differs in three ways from that research. First, the present study recorded training time to assess whether the inclusion of practice significantly increases the time the users spend on training. Second, whereas the previous research concentrated on cognitive outcomes, the present study also tracks motivational outcomes. Third, an additional (third) experimental condition was included. In that condition, users had an opportunity to engage in practice both before and after the video (i.e., practice-video-practice = PVP). The condition mimics the situation in which a user first tries to complete a software task independently (with or without success), then consults a video, then has another opportunity for practice.

The set-up of the study was quasi-experimental, with random allocation of participants to conditions within classrooms. In the control condition (Video only = V), participants could only view the videos during training. The three experimental conditions varied in the timing of practice. One condition provided an opportunity for practice after instruction (i.e., video-practice = VP), while another offered the chance to practice before viewing the instruction (i.e., practice-video = PV). The third experimental condition offered the opportunity for practice before and after the instruction (i.e., practice-video-practice = PVP).

Research question 1: "Does practice affect the outcomes for key variables (training time, motivation, learning) for video-based training?" This research question investigates whether there is any effect of the presence of practice (control versus experimental conditions). The inclusion of practice was expected to increase the training time of the users, because the practice is in addition to the video.

For motivation during training, the study looks at the users' mood states and flow experience. These constructs represent temporary affect states that can mediate the effect of motivation on learning (Vollmeyer & Rheinberg, 1999, 2006). For motivation development, the study looks at appraisals of task relevance and self-efficacy before and after training. These constructs represent the two key factors in the expectancy-value theory of motivation (Eccles & Wigfield, 2002). No specific predictions for the effects of condition on motivation were formulated in advance.

In view of the arguments reported in the worked example literature, a positive effect of practice was expected for learning, as assessed with task performance

tests (i.e., immediate post-test, delayed post-test, transfer test).

Research question 2: “Is there an effect of the timing of practice on the outcomes for key variables (training time, motivation, learning)?” No specific predictions of the effect of timing of practice on training time were formulated in advance.

In view of the argument reported in the worked example literature, a stronger effect of practice-before than practice-after on motivation was expected. There were no specific predictions for PV versus PVP.

The tested prediction for learning was that the highest learning gains will be seen for the PVP condition, followed by VP, followed by PV. It was expected that the highest learning gains would be in the condition with practice-before and practice-after (PVP), because it combines the advantages of the two practice timings. The classic instructional paradigm is to start with instruction and follow with practice. This is also the standard recommendation for training on procedural knowledge development (Ertelt, 2007; Grossman, Salas, Pavlas, & Rosen, 2013; Kerr & Payne, 1994; Rosen et al., 2010; H. van der Meij & van der Meij, 2013). On these grounds, it was expected that practice-after (VP) would yield greater learning than practice-before (PV).

Method

Participants

The 93 participants in the study came from two first-year and two second-year classrooms from a middle school in Germany. Students from each classroom were randomly assigned to the four conditions in the experiment. One student was excluded from the database, because he did not take the pre-test. Also excluded were five students who missed training. The mean age of the remaining 45 male and 42 female students was 12.4 years (range 11.3–14.3). All instructional materials, including the software, were in the students' native German language.

Instructional Materials

Videos

The design of the video for software training was based on the theoretical model shown in Figure 5. The model

combined Demonstration-Based Training (DBT) and multimedia learning theory (e.g., Brar & van der Meij, 2017; H. van der Meij, 2017; H. van der Meij & van der Meij, 2016). The constructed videos were recorded demonstrations that illustrated and explained the stepwise progression involved in task completion. Each video showed a single, menu-based method for completing the given task. That demonstration was enhanced with instructional features that support four key observational learning processes, namely, motivation, attention, retention, and (re)production.

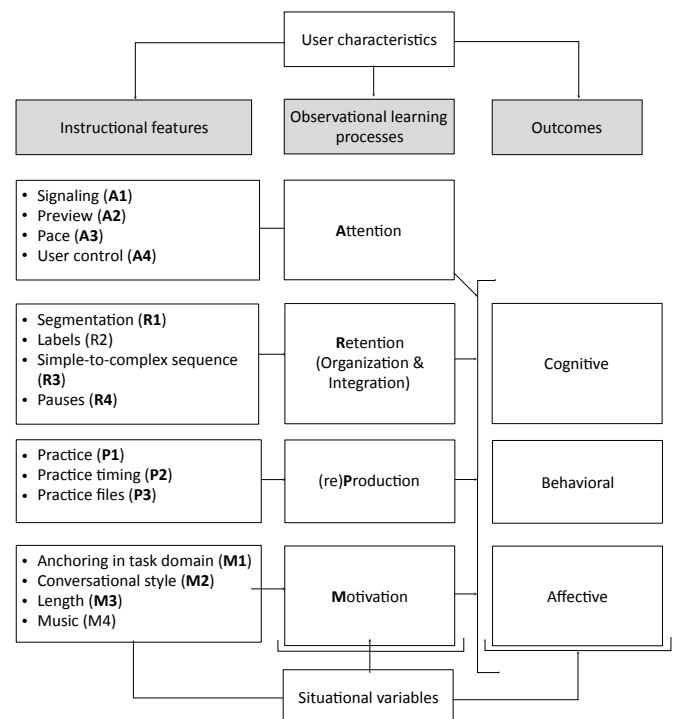


Figure 5. Theoretical model for video-based software training. Highlighted instructional features (in bold) were incorporated in the design of the videos in this study.

The videos instructed students how to format Microsoft Word documents. The tasks selected for inclusion represented important features from the school reports that the students must regularly produce. This anchored the instructions in the task domain of the audience (M1 in Figure 5).

Long formatting tasks were split into meaningful subtasks. For instance, the objective of changing the margins of a complete Word document was split into one subtask (and video) for adjusting the right margin and one subtask for the left margin. This segmentation

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(R1) reduced task complexity. Users needed to remember three main steps in each task, which should be within the limits of their working memory capacity (Doumont, 2002; Sweller, van Merriënboer, & Paas, 1998). In addition, segmentation yielded shorter videos, which contributes to engagement (Guo, Kim, & Rubin, 2014; Wistia, 2012).

The videos were organized by ‘chapters.’ Chapter 1 revolved around formatting a complete Word document. The two task videos in this chapter demonstrated how to adjust the right and left margin, in that order. Although both tasks involved selection of a similar screen object, object selection was far easier to accomplish for the right margin. The videos were thus ordered in a simple-to-complex sequence (R3). Chapter 2 revolved around formatting a section from a Word file. This chapter included four task videos (indenting paragraphs, left indent citation, right indent citation, and formatting lists).

Students could access the videos via a website that presented a table of contents with chapter titles serving as organizers. Paragraph titles described the distinct tasks and were linked to the videos. The links served to address the videos’ weak points of accessibility as compared with a paper-based document. Clicking on a paragraph title changed its color and opened the video on the right side of the website. Students could start, pause, rewind, and stop the video with a standard control panel. With this panel, students had a moderate degree of user control (A4) over video play.

Each video started with a preview (A2) with information about the initial goal state and an explanation of jargon for key concepts (e.g., margin, paragraph, citation). An example of a preview statement (for paragraphs) in the videos was: “You see a text in which the separate sections are inconspicuous. To make these stand out better, we should indent the first part of each section.” These statements frequently used personal pronouns (e.g., you, we) to create a conversational style (M2).

The main content of the video consisted of the action-reaction pattern that characterizes procedural discourse for software tasks (H. van der Meij, Blijleven, & Jansen, 2003; H. van der Meij & Gellevij, 2004). The recorded demonstration of the (changes on the) interface was accompanied by a narrative. The narrative that told the user what to do on the interface followed the preferred format for these statements (Farkas,

1999). That is, each action was presented in a succinct statement built around an imperative verb (e.g., “Click the left mouse button” or “Press the ALT-key to check if the margin is 4 centimeters”). In addition, the narrative informed the user of the (in)visible effect of an action on the interface (“You can see a dotted line appear on your screen” “and a small window with the words ‘Right Indent’ appears”).

Signaling (A1) and zooming techniques were used to draw the user’s attention to screen objects and locations. A warm color (e.g., red) was used to increase the attention-drawing effect (Kosslyn, Kievit, Russell, & Shephard, 2012).

The videos regularly featured 2-second pauses (R4) that coincided with sub-goal achievement in the procedure. These pauses can help the user overcome processing problems caused by transience of information; they give the user a brief period of additional time to digest the information (Spanjers, van Gog, Wouters, & van Merriënboer, 2012).

The pace (A3) of the video was largely determined by the narrative. The male voice-over went at a normal speaking rate. To obtain an objective measure of pace, a mean words-per-minute (wpm) count was computed. The wpm metric is the number of narrated words divided by the total time of the video (in seconds) multiplied by 60. The mean wpm for the videos was 89. This is considerably lower than the average 125 to 150 wpm for conversational speed in English (Fulford, 1992).

There are different recommendations for video length (M3). Plaisant and Shneiderman (2005) proposed a 1-minute duration for recorded demonstrations. An empirical analysis of viewer engagement with MOOC videos (Guo et al., 2014) found best results for short videos of 3 minutes maximum. The mean length of the videos in the present study was 1.13 minutes (range 0.58–1.46). Four of the six videos were 1 minute long or shorter. The total length of the videos was 6.35 minutes.

Practice files

Students who engaged in practice during training were supported in their hands-on experience with *practice files* (P3) created especially for each task. In addition to facilitating practice, these files also standardized practice; they made task completion efforts comparable across conditions. The practice files in the experiment were superficially different from (but structurally similar to) the file in the video. This was expected to enhance

the user's understanding of the procedure. The PVP condition included two practice files for each task. The training time measure was obtained from saved practice files, as was task performance success during training. In the PVP condition, success was measured on the first as well as the second practice task.

Instruction booklets

For each condition a paper *instruction booklet* provided students with a training scenario (see Figure 6). The task sequence in the booklet was the same as on the website. For each new task, the booklet first engaged the students in a “reading task” that explained jargon for key concepts (e.g., margin, paragraph, citation) and presented a before-after display of the initial and final goal state for a task. (Note that the booklet contained this preview information to provide students in the PV and PVP condition with the necessary prerequisite information for engaging in task practice before viewing the video.) Next, the booklet directed the student to view the video or to engage in hands-on practice, depending on the student's assigned condition. A “practice task” was flagged with a keyboard and a list of action steps. A “viewing task” was flagged by a picture of a monitor and instructions to view a particular video. In addition, the booklet included the questionnaires for mood and flow (see Instruments).

Instruments


Initial experience & motivation questionnaire (IEMQ)

The IEMQ is a paper-and-pencil instrument that measured the student's experience and motivation before training. The IEMQ presented a screenshot for each training task and asked three questions about that task: (a) “Do you ever have to do this task?” (experience), (b) “How often do you need to complete this task?” (task relevance), and (c) “How well do you think you can complete this task?” (self-efficacy). Answers were given on a 7-point Likert scale, which ranged from never (1) to always (7), or very poorly (1) to very well (7). Reliability analyses, Cronbach's alpha, indicated satisfactory results for the three measures (i.e., Experience $\alpha = 0.77$; Task Relevance $\alpha = 0.76$; Self-efficacy $\alpha = 0.89$).

Mood questionnaire (MQ)

The MQ is a paper-and-pencil instrument that asked the student to select the pictogram, a smiley, plus descriptor


2.3 Adjusting the start of a paragraph


Reading Task


The structure of a text is often not very clear because paragraphs do not stand out. You can make these distinct sections clear by indenting the first sentence of a paragraph.

- **Look at the screenshot “Before”**
- **Action:** You want to **indent** all paragraphs
- **Look at the screenshot “After”**

Before



After




Practice Task

Viewing Task

Figure 6. A section from the instruction booklet for the practice-video (PV) condition (translated version)

(i.e., happy, certain, neutral, uncertain, or sad) that best fitted his or her current emotional state (see Read, 2008). The analysis of mood looked at its valence (compare Plass, Heidig, Hayward, Homer, & Um, 2014) by making a distinction between positive, neutral, and negative values. Positive mood states are considered conducive for learning, while negative mood states can disrupt learning (Astleitner, 2000; Um, Plass, Hayward, & Homer, 2012). “Happy” and “certain” were scored as signals of a positive mood; “uncertain” and “sad” were signals of a negative mood. The MQ was administered four times, after the user had completed a major task

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in the tutorial (i.e., after setting both margins for a complete document, and after formatting paragraphs, citations, and lists). Scores are presented as percentages. Thus, a score of, say, 75% for positive mood indicates that the student selected the happy or certain smiley at three of the four measurement points for mood.

Flow questionnaire (FQ)

The FQ is a paper-and-pencil instrument that was an adapted version of the Flow Short Scale (FKS) from Rheinberg, Vollmeyer, and Engeser (2003). It consisted of four items (e.g., “I had the feeling that I had everything under control,” “The right thoughts came without effort,” “With every step, I knew what to do,” and “My head was completely clear”). Answers were given on a 7-point Likert-scale, which ranged from completely disagree (1) to completely agree (7). The FQ was always presented immediately after the MQ. Hence, there were also four measurement points. Reliability scores, Cronbach’s alpha, were at or above 0.90 for each time point.

Final motivation questionnaire (FMQ)

The FMQ was a paper-and-pencil instrument that asked students to rate the relevance of the trained tasks and to appraise their self-efficacy for completing these tasks in future. There were seven questions about task relevance (e.g., “I find it important to have a wide enough margin for a document” and “I think it is important to present lists in a well-structured manner”), and seven questions about self-efficacy (e.g., “I can now present a nicely structured list” and “I now know how to indent the first line of a new text segment”). Answers were given on a 7-point Likert-scale, which ranged from completely disagree (1) to completely agree (7). Reliability scores, Cronbach’s alpha, were 0.87 for task relevance and 0.90 for self-efficacy.

Performance tests

Five tests (i.e., pre-test, practice, immediate post-test, delayed post-test, and transfer test) assessed the students’ task performance success. With the exception of the transfer test, all test items presented the formatting tasks demonstrated in the videos, differing only in the appearance of the test files. The transfer test included items that differed slightly from the training tasks (e.g., improve a list within a list). For each test, students were awarded a score of 0 points for each task they did not

complete correctly. Correct task completion yielded a score of 1. With the exception of the transfer test, the maximum score for each test was 7 (i.e., right and left document margin, right and left citation indent, paragraph indent, list keywords, and list descriptors). For the transfer test, the maximum score was 4 (one main task consisted of two distinct subtasks). Scores were converted to a percentage of possible points.

Procedure

The study was conducted in three sessions that were held in the computer rooms of the school. In the first session, students were told (5 minutes) that they would engage in software training on Microsoft Word to assist them in improving the formatting of their school reports. Next, they were instructed to complete the IEMQ and Pre-test (20 minutes).

The training session followed a week later. This session started with a 10-minute introduction. An explanation was given about using the instruction booklet. This explanation told the students about the different types of activities they were expected to engage in and their sequence. Website navigation and video usage were also illustrated. In all conditions, the students were instructed to watch the video for each task until they felt sure they could complete the task.

Practice (P1) and practice sequence (P2) were both manipulated in the design of the study, leading to slightly different procedures in the experimental conditions. Students in the experimental conditions received instructions about the handling of practice files and video viewing. In the PV condition, students were told they were not allowed to return to a practice task after having seen the video. Instead, they were to continue to the next practice task. In the VP condition, students were told they were not allowed to return to the video once they had started on the practice. After practice, they were to move on to viewing the next video. In the PVP condition, students were told they were to practice first, then view a video, and then engage in another practice attempt (with a different file) at the instructed task.

All students were instructed to work independently for 40 minutes and to call for assistance only when stuck. Students received the audio input from the video via headphones. After training was completed, there was a 10-minute break. Next, they were instructed to complete the FMQ (5 minutes) and the immediate

post-test, for which the students were given 20 minutes. Students were not allowed to consult the video during this (or the delayed) test.

The third session followed one week later. In a brief (5-minute) introduction, the students were told that, in addition to a test on the trained tasks, there was another test with three new, untrained tasks they were to try to accomplish. The students were instructed to start with the delayed post-test first and then to work on the transfer test. They received 30 minutes to complete both tests together.

Analysis

A check on the random distribution of student characteristics across conditions revealed no statistically significant differences for age or gender. Also, conditions did not differ on scores on the IEMQ nor on the pre-test scores. The effects of presence and timing of practice were assessed for gain scores. The analyses involved ANOVAs. If the assumption of homogeneity of variance was violated, the analysis involved a non-parametric test (i.e., Mann Whitney (U) test or Kruskal-Wallis (H) test). For significant effects of timing of practice, contrasts were computed. Only the statistics for significant findings will be reported in detail. Tests were two-tailed with alpha set at 0.05. The degrees of freedom occasionally differ due to missing data. For significant differences found on non-parametric tests, I report the r -statistic (Field, 2013). This statistic tends to be qualified as small, medium, and large for respectively the values $r = 0.10$, $r = 0.30$, and $r = 0.50$. For ANOVAs, Cohen's (1988) d -statistic is used to report effect size. These tend to be qualified as small for $d = 0.20$, medium for $d = 0.50$, and large for $d = 0.80$.

Results

Training Time

The presence of practice had a significant and large effect on *training time*, $F(1,60) = 28.539$, $p < 0.001$, $d = 1.54$. Training time was shorter in the control condition compared to the practice conditions (see Table 1).

The timing of practice also had a significant effect on training time, $F(2,41) = 14.377$, $p < 0.001$. Detailed analyses showed that VP and PV students finished training significantly and substantially faster than PVP students, respectively $p < 0.001$, $d = 2.08$, $p < 0.001$, $d = 2.34$.

Table 1. Mean (standard deviation) and range for training time by condition

Condition	Training time*		
	M	(SD)	Range
Video-Practice ($n = 18$)	24.00	(4.00)	19-32
Practice-Video ($n = 17$)	23.29	(3.79)	17-30
Practice-Video-Practice ($n = 7$)	32.29	(3.95)	29-40
Video only ($n = 19$)	18.11	(4.00)	15-32
Total ($n = 61$)**	22.92	(5.72)	15-40

* Training time in minutes.

** Problems with the recording software led to missing data for 26 students, mostly in the PVP condition.

Motivation During Training

The students predominantly experienced a positive mood during training (see Table 2); expressions of positive mood states occurred about twice as often as neutral ones. Negative mood states were reported the least often, with a mean frequency of 18.5%. The presence and timing of practice did not affect positive or neutral moods.

The presence of practice had a significant and small effect on negative moods, $U(87) = 900.500$, $z = 2.68$, $p = 0.007$, $r = 0.29$. Negative mood states were experienced more often in the practice conditions than in the control condition, $d = 0.61$. The timing of practice had no effect on negative moods.

With an overall mean score of 4.3 points, the results for flow were just above the scale midpoint. This outcome indicates that all students experienced a moderate level of concentration during training and did not feel taxed beyond their capacities. The presence and timing of practice did not affect flow.

Motivation After Training

The scores for task relevance indicate the presence of a low level of motivation before training. After training, these scores had risen to above mid-scale values (see Table 3). The presence and timing of practice did not affect gain scores for task relevance.

The scores for self-efficacy before training indicate that students began training with a modest level of confidence in their capacity to deal with the training tasks. Self-efficacy scores were much higher after training (see Table 3). The presence and timing of practice did not affect gain scores for self-efficacy.

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Learning: Training Test Outcomes

The test scores indicated that the students began training with relatively low prior knowledge (15.9%) and that there were considerable learning gains during and after training (see Table 4). The timing of practice had a significant effect on gain scores from pre-test to practice, $H(67) = 7.897$, $p = 0.019$. Further analyses showed that there was a significantly stronger and moderate gain from pre-test to practice for VP compared with PV and PVP, respectively $U(44) = 153.500$, $z = 2.07$, $p = 0.038$, $r = 0.31$, and $U(43) = 123.500$, $z = 2.63$, $p = 0.008$, $r = 0.4$. (When the analysis was done for the practice-after task in the PVP condition, the difference with VP became marginally significant, $U(43) = 155.000$, $p = 0.064$.)

The presence of practice had no effect on the gain scores from pre-test to immediate post-test. In contrast, there was a significant effect of timing of practice, $F(2,66) = 4.183$, $p = 0.020$. Further analyses showed there was a significantly stronger and large gain from

pre-test to immediate post-test for PV compared with PVP, $F(1,46) = 8.40$, $p = 0.006$, $d = 0.85$.

The presence and timing of practice had no effect on gain scores from pre-test to delayed post-test.

Learning: Transfer Test Outcomes

The transfer test scores show there was a moderate level of transfer of training (see Table 4). The presence of practice had a significant and moderate effect on the scores for the transfer test, $F(1, 86) = 6.231$, $p = 0.014$, $d = 0.65$. The results from the control group were lower than the scores in the practice conditions. Detailed analyses showed that the difference between the control and VP condition was significant and large, $F(1, 39) = 7.336$, $p = 0.010$, $d = 0.86$. The difference between the control and PV condition was marginally significant $F(1, 43) = 3.987$, $p = 0.052$. There was no difference between the control and the PVP condition. The timing of practice had no effect on the scores for the transfer test.

Table 2. Means (standard deviations) for mood and flow by condition

Condition	Mood*						Flow**	
	Positive		Neutral		Negative			
	M	(SD)	M	(SD)	M	(SD)	M	(SD)
Video-Practice ($n = 20$)	52.5	(42.0)	25.0	(28.1)	22.5	(32.3)	4.29	(1.87)
Practice-Video ($n = 24$)	44.1	(28.6)	30.9	(24.1)	25.0	(24.5)	4.19	(1.63)
Practice-Video-Practice ($n = 23$)	56.5	(40.0)	24.6	(31.1)	18.8	(36.4)	4.29	(1.91)
Video only ($n = 20$)	63.8	(41.7)	30.0	(35.9)	6.3	(19.7)	4.50	(1.59)
Total ($n = 87$)	53.8	(38.1)	27.7	(29.5)	18.5	(29.4)	4.31	(1.73)

* Scores for mood states are given in percentages.

** Scale maximum is 7. A higher score indicates greater flow.

Table 3. Mean (standard deviation) for task relevance and self-efficacy by condition

Condition	Task relevance*				Self-efficacy*			
	Before		After		Before		After	
	M	(SD)	M	(SD)	M	(SD)	M	(SD)
Video-Practice ($n = 18$)	1.52	(0.45)	4.78	(1.37)	3.77	(1.71)	4.52	(1.55)
Practice-Video ($n = 21$)	1.84	(1.02)	4.46	(1.51)	3.15	(1.89)	4.69	(1.63)
Practice-Video-Practice ($n = 14$)	2.07	(0.82)	4.82	(1.85)	3.14	(1.80)	4.61	(1.82)
Video only ($n = 20$)	1.98	(0.99)	4.52	(1.33)	3.34	(1.82)	5.02	(1.29)
Total ($n = 73$)	1.85	(0.87)	4.62	(1.48)	3.25	(1.80)	4.72	(1.54)

* Scale maximum is 7. Higher scores indicate higher levels of task relevance or self-efficacy.

Discussion

The experiment systematically investigated the effect of practice in video-based software training on training time, motivation, and learning. The main findings for these dependent variables will be discussed for the two manipulations of the independent variable, namely, the presence and timing of practice.

The first research question concerned the effects of the presence of practice. For training time, a significant effect was found. The video-only condition completed training substantially faster than the experimental conditions (18 minutes versus 25 minutes). This finding confirms the expectation that complementing a video with practice increases training time.

The practice conditions reported experiencing significantly more negative moods during training than the video-only condition. This finding signals that practice can rouse unpleasant feelings. Much more so than when merely viewing a demonstration of task performance, students are likely to experience obstacles when they engage in their own task practice.

The influence of negative emotions on learning has been studied relatively infrequently in education. The FEASP approach (Astleitner, 2000) contends that instructions should be designed in such a way that they decrease negative emotions, such as Fear, Envy, and Anger, and increase positive emotions such as Sympathy and Pleasure. Because negative moods can have an adverse affect on learning, they should be reduced or avoided whenever possible. The finding from the present study may therefore prompt designers to address the possible occurrence of negative feelings when practice is included in training (e.g., “You may discover that practice is not as easy as it seems. This is often the

case when new knowledge must be applied. So don’t worry if task completion does not go smoothly.”).

The experiment showed that students gave substantially higher ratings for task relevance and self-efficacy after training than before. There was no effect of presence or timing of practice on these motivational gains.

The video-only condition had lower gain scores on both post-tests than the practice conditions, but the difference was not statistically significant. The experiment, therefore, did not support the expectation that practice would yield greater learning for trained tasks. However, there was a significant difference on the transfer test, which favored the practice conditions. Detailed analyses revealed that the video-only condition compared especially unfavorably with the video-practice condition. The finding concurs with the outcome from Ertelt’s (2007) study. In worked examples research, such an effect of practice is also repeatedly reported (see e.g., Renkl, 2014a; Salden, Koedinger, Renkl, Aleven, & McLaren, 2010). The transfer test assessed learning beyond what was explicitly trained. This finding, therefore, tentatively supports the claim that practice during training contributes to better software understanding. Practice appears to increase the user’s ability to accomplish related, untrained tasks.

The second research question concerned the timing of practice. This involved comparisons between the three experimental conditions. The PVP condition was found to have significantly longer training time than the other conditions. It is unclear whether this stems from users spending more time viewing the videos or whether it stems from the repeated practice.

There was no significant effect of timing of practice on motivation. The users in the three practice

Table 4. Mean percentages (standard deviations) for performance tests per condition

Condition	Pre-test		Practice		Immediate post-test		Delayed post-test		Transfer test	
	M	SD	M	SD	M	SD	M	SD	M	SD
Video-Practice (<i>n</i> = 20)	20.0	13.4	68.6	31.3	45.7	29.2	50.0	23.4	57.5	29.4
Practice-Video (<i>n</i> = 24)	11.3	16.3	45.8	26.0	50.6	33.2	51.2	30.4	50.0	27.6
Practice-Video-Practice (<i>n</i> = 23)	16.8	12.7	42.9*	20.7	32.9	19.5	52.8	22.1	46.7	26.4
Video only (<i>n</i> = 20)	16.4	17.5			42.1	25.6	44.3	23.6	33.8	26.0
Total (<i>n</i> = 87)	15.9	15.1	51.6	28.0	42.9	27.8	49.8	25.0	47.1	28.1

* This is the score for the practice-before task. The score for the practice-after task was 52.8% (21.7)

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conditions essentially experienced similar mood and flow states during training and did not differ in the development of their appraisals of task relevance and self-efficacy. The findings, therefore, do not support the claim that practice before training increases motivation (compare Stark et al., 2000).

There was a significant effect of timing of practice on the practice test scores. The finding that practice-after (VP) yielded a gain score on this test than practice-before (PV and PVP) is not very striking. It merely illustrates that the videos helped students achieve greater task success during training. What is more surprising, however, is that the PVP condition also did poorly on the practice-after task. The PVP condition was expected to have the best practice test performance, if only because users could engage in practice twice. Apparently, it did not work that way. What happened? Did users tire from having to attend three times in a row (practice-before, video, and practice-after) to the same formatting task?

The PVP condition also had the worst gain score on the immediate post-test. There was a significant effect of timing on this test. Detailed analyses again showed that the PVP condition compared especially unfavorably to the PV condition.

There was no effect of timing of practice on gain in knowledge as shown on the delayed post-test or on the transfer test.

Conclusion

The coupling of instruction and practice, preferably in that order, is a well-established design approach in education. That a coupling of practice and video is also found in video-based training for software was illustrated in the introduction of this paper. The “Try it” stand-alone video on Adobe’s website came accompanied with downloadable practice files (see Figure 4). These files accommodate practice, enabling the user to mimic the demonstrated actions on his or her own computer. The present experiment aimed to find out whether there is empirical support for complementing instruction with practice and whether the timing of practice vis-à-vis instruction matters.

The findings from the present study do not unequivocally support the inclusion of practice in video-based software training. Practice was found to increase training time. This finding can be seen as an

advantage, because it can increase learning. However, it may also be a disadvantage, because it can cause early drop-out. The inclusion of practice also increased the occurrence of negative mood states. This is clearly a disadvantage, and the suggestion was given to try to mitigate the presence and effect of such states when designing for practice. The findings for learning of trained tasks showed that the video-only condition achieved comparable outcomes on an immediate and delayed performance test. The only finding that clearly favored the inclusion of a practice condition concerned the transfer test. On related but not trained tasks, the practice conditions did significantly better than the video-only condition.

In short, the experiment led to somewhat mixed outcomes for the presence of practice in video-based software training. The finding from this single study (and its immediate predecessor) are not enough to proclaim that practice is not needed, of course. Rather, the outcomes suggest that incorporating a practice component in a video-based training design is a more complex design issue than might initially be thought.

The findings for the timing of practice favor a sequence in which instruction precedes practice. On measures of motivation and scores for learning after training, no difference was found between the video-practice and practice-video conditions. In contrast, there was a significant and substantial advantage for the video-practice condition for the practice test.

The findings for the practice-video-practice (PVP) group were somewhat perplexing. Whereas this condition was expected to have the highest learning gains of the practice conditions, learning was actually lower for these students. Both on the practice and immediate post-test, the students in this condition showed significantly lower gains than the other practice conditions. The PVP condition was included in the experiment to represent a realistic scenario where practice precedes video consultation and is followed by further practice. Additional research is needed to determine why the users in this condition performed relatively poorly during and immediately after practice.

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Using Interface Rhetoric to Understand Audience Agency in Natural History Apps

By Sonia H. Stephens

Abstract

Purpose: A wide array of apps is increasingly being developed to provide information about natural history and science for users of mobile devices. This article discusses how a better understanding of audiences' agency as they use natural history apps—i.e., their ability to take meaningful action—can help technical communicators develop more effective products.

Method: I use interface rhetoric to examine key considerations of audience agency for natural history apps, focusing on five bird identification guide apps, part of a technical genre associated with historically established—though evolving—use practices. I analyze and discuss how the rhetorical choices of developers may empower audiences to understand nature or frame their interactions with nature in certain ways.

Results: I identify three overlapping ways these apps function as interfaces for users: 1) to frame their audience's experience of and relations to a body of natural history knowledge, 2) to model the conventions and practices of the birding community, and 3) to frame their audience's understanding of the natural world as a whole.

Conclusion: Approaching natural history guide app design with an awareness of the diverse ways in which these texts function as interfaces can help technical communicators facilitate different types of audience agency during the apps' ultimate situated use.

Keywords: usability, interface rhetoric, audience agency, context of use

Practitioner's Takeaway:

- Presents an approach for understanding audience agency in mobile app design using rhetorical theory
- Discusses a case study of audience agency in a document genre with a specific use context
- Describes three different interface functions of a specific category of mobile app, with illustrative examples from five apps

By Sonia H. Stephens

Introduction

Digital natural history apps provide scientific information about the natural world to audiences with a wide range of technical knowledge about and interest in nature, from identifying fungi to locating the moons of Jupiter. One major category of natural history apps is the bird identification guide, a remediation or re-representation in digital form of the traditional paper-bound book genre that is strongly associated with birdwatching or “birding.” Bird identification guides present technical information that is used in a very specific context—typically, in the outdoors while simultaneously juggling other tools like binoculars—as well as either before or after field excursions. Therefore, identification guides’ audiences access information in a variety of ways under variable physical conditions. Schaffner (2009) offers a stream-of-consciousness perspective on how a birder might use a guide to look for a specific picture of a bird that they have spotted and then confirm that the image on the page matches their sighting through binoculars: “Page ahead, now back. Too far—use the index. Binoculars up, focus—look, look—return to the guide” (p. 95). Material size and weight considerations can constrain the amount of information that can be included in these print-based guides.

Both print-based guides and electronic apps encourage birders to make meaning from their encounters with birds. Their design elements—including organizational logic, visuals and text, and interactive and multimedia features (at least in the case of apps)—have both persuasive and normative functions. By extension, bird guides frame readers’ experience of the natural world and enroll them into the conscious and unconscious practices and norms of the birding community (Schaffner, 2011).

The technical communication field has a long-standing interest in designing information for audiences (e.g., Mirel, 1998; Carliner, 2000), particularly for mobile devices (e.g., Swarts, 2007; Farman, 2011). Calls have also been made for a more extensive rhetorical understanding of digital texts (Warnick, 2005). One specific concern is how visual and interactive technologies affect audience agency (Graham, 2009; Rawlins & Wilson, 2014) or audiences’ ability to take meaningful action either while using a technology or later, for example, when making decisions as a result

of their earlier interaction. In this project, I propose that bird guide apps can help us understand audience agency. These apps can facilitate audiences’ real-world opportunities to exercise agency in several different possible ways: in terms of their ability to identify birds, participate with a community of like-minded birders, and understand more about the ecological interactions of the birds they observe. This paper uses interface rhetoric—defined as an examination of the values and ideology that are embedded in interface design (Neill, 2013)—to illustrate how app designers might think about these different aspects of audience agency that are important during use. I argue that approaching natural history guide apps with an awareness of the diverse ways in which these texts function as interfaces can help technical communicators facilitate different types of audience agency. I conclude with suggestions for further research on application development that arise from this exploratory study.

How Birders Use Bird Identification Guides

Birding centers on the observation and identification of birds, an activity that has long been assisted by bird identification field guides that combine visual and verbal descriptions to aid the reader in identifying the birds that they observe (Schaffner, 2011). Traditional guides are portable books of a size, weight, and sturdiness that allow birders to take them hiking or boating. Birders selecting a guidebook must often balance physical size with comprehensiveness of information (Cornell Lab of Ornithology, 2009). Therefore, bird guides have always been a mobile genre, unlike some other types of mobile documents examined by researchers (Swarts, 2007). Today, both “born digital” and “converted from print” bird identification apps are being produced. Audiences may use bird guides in different ways, as some birders emphasize bird conservation, others compete to add to their “life lists,” and others simply enjoy watching bird behavior.

Two rhetorical functions of traditional book-based bird identification guides are to introduce birders to the norms of the broader birding community and to configure what birders look and listen for when they interact with the natural world. Most contemporary book-based identification guides share several common features that facilitate their use for quick reference in mobile situations. These include a standardized overall

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taxonomic arrangement of species descriptions, the parallel alignment of text and images that describe each species, identification of key field marks on bird images that help users differentiate between similar species, multiple indices to facilitate searching by different features, and maps of species ranges that help audiences narrow down which birds are likely to be found in a given location.

One classic example, *The Peterson Guide to Birds* (2010), is a long-standing guide that has gone through multiple editions since its first publication in 1934 but still maintains many features characteristic of the genre; Lund (2015) describes it as the book that “invented the modern field guide.” *The Peterson Guide* presents painted representations of bird species in taxonomic order, in isolation from both nature and human culture. Arrows annotate key features that are helpful in identification, and conservation is discussed in the text as a general topic while specific conservation measures are not discussed (Schaffner, 2009). A few printed guides—particularly those produced for beginning birders—differ by using photos that show birds in their natural habitat or arranging according to color or habitat, though these are less common. Schaffner (2011) argues that, overall, these texts train birders to approach observing birds as a problem of classification while erasing the connections between birds, their ecosystems, and human effects on both.

Most bird identification guides use either photographs, or paintings or drawings of birds. This choice has both aesthetic and communicative implications. Although both photos and drawings are selected to best represent the appearance of a species, a photographic representation shows a specific bird of a certain age with a particular seasonal plumage, under unique lighting conditions (Pauwels, 2006). By contrast, a drawing or painting might allow the illustrator to emphasize key characteristics that may aid in comparison. In many cases, multiple images of each species might be included, as appearance might vary by sex, age, and subspecies, as shown in a screenshot from the *Sibley Birds of North America* app (Figure 1).

As in many technical genres, bird identification guides have changed over time. Early texts included often anthropomorphized and moralistic narratives about each species with minimal illustrations, whereas contemporary texts are image-heavy and focus on identification and scientific classification

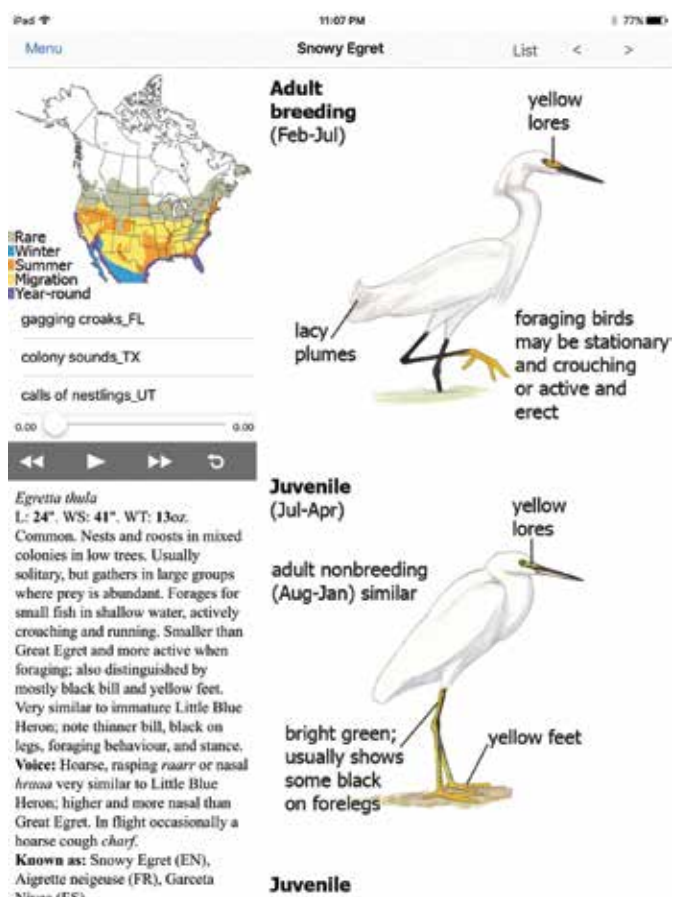


Figure 1. Screenshot from Sibley Birds of North America app (Sibley, 2015) showing the overall layout of the app interface, interactive features, and paintings of adult and juvenile birds with key markings pointed out. Used by permission of MyDigitalEarth.

(Schaffner, 2011). This shift parallels one in the professionalization of ornithological discourse, from natural history narrative to an experimental science orientation (Battalio, 1998). Along with this shift in content and arrangement, the potential uses of bird guides and their affordances for audience agency have changed. For example, birders today are given tools for understanding what species a given bird belongs to rather than whether a given bird might have “unsavory” personality traits (e.g., eating carrion). Bird guide apps provide audiences augmented and additional tools for identifying birds, understanding birds’ place in ecosystems, and interacting with other birders. These diverse functions make interface rhetoric particularly applicable to understanding how bird guide apps affect audience agency.

Table 1. Technical and feature information about apps examined for this project

Title	Release date	Availability	Major features	Cost
Bird song ID USA (v 8.05)	2015	iOS/ Android	<ul style="list-style-type: none"> • Limited list of birds; large geographic range • Record sounds; compare species' sounds 	\$9.99
iBird Hawaii & Palau Guide to Birds (v 9.1)	2015	iOS	<ul style="list-style-type: none"> • Large list of birds; limited geographic range • Search by physical features; social forum; upload/share photos; turn field mark annotations on/off; sounds; range maps 	\$9.99
Audubon Bird Guide: North America (v 3.9)	2016	iOS/ Android	<ul style="list-style-type: none"> • Large list of birds; large geographic range • Search by location and physical features; social forum; limited sounds; range maps 	free
Sibley Birds of North America (v 1.9)	2015	iOS/ Android	<ul style="list-style-type: none"> • Large list of birds; large geographic range • Search by location and physical features; compare selected species' pictures; sounds; range maps 	\$19.99
The Warbler Guide (v 1.0.1)	2015	iOS/ Android	<ul style="list-style-type: none"> • Limited list of birds (single group); large geographic range • Search by location, physical features, and season; view birds from different angles; compare selected species' pictures; sounds; range maps 	\$12.99

Representative bird identification apps

In order to illustrate the features of bird identification apps, I selected five of the top downloaded bird apps from the iTunes app store in 2016 and viewed them on an iPad. Table 1 provides technical and feature information about the apps discussed in this project at the time of viewing, though features and cost have changed for several as of the writing of this paper. Each of the apps shared four common features, though the level of detail varied among them: 1) verbal descriptions and behavioral information about each species, 2) illustrations of each species, 3) the ability to browse and search by location, and 4) recorded sounds. The first two features (verbal information and illustrations), along with maps of species' ranges and phonetic descriptions of birds' calls (e.g., the Red-throated loon's, *Gavia stellata*, "Drawn-out, gull-like wailing or shrieking, *aarOOoa, aarOOoa*" [Sibley, 2015]), are also typically found in book-based field guides.

Apps were selected to exemplify the available range of features in this genre of text, and therefore, other apps that did not have additional or novel features, or which may have lacked some of the features discussed here, were not included in this sample. The purposive sample studied includes apps that 1) use photos, paintings, and/or computer-generated images;

2) focus on North America or smaller geographic ranges (specifically, Hawaii and Palau); 3) include either all birds in a region or a smaller number of species; and 4) include a range of interactive features including sounds, rotatable images, and social forums. With the exception of the interactive features, these characteristics are discussed in birding forums as points of consideration when selecting a field guide. For example, a guide with a narrow range of species might include more detailed information about a specific group (Lund, 2015), and paintings may be preferred over photos by more experienced birders (Cornell Lab of Ornithology, 2009).

Interface Rhetoric and Bird Identification Apps

Although an interface can be understood as something that frames a user's interaction with information, thinking about the rhetoric of the interface requires attention to the user and the conditions of use, the information that is being accessed, and how the interface affords and constrains access of the user to the information. Broadly speaking, rhetorical design describes how objects incorporate arguments about how we should behave (Buchanan, 2001). The rhetorical building blocks of screen design include

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the selection and arrangement of facts, images, and arguments; provision of options for searching for data and making choices about what to see next; and feedback response when the user provides input. The rhetorical effects of interface design can be direct, such as the loss of credibility engendered by a poorly designed menu system, or indirect, such as providing a space in which existing power relations are reinforced (Selfe & Selfe, 1994).

One key technique of arrangement in both bird identification guides and apps is image-text parallelism, which organizes content as a series of images of each species paired with text that describes that species. Image-text parallelism is an important persuasive technique in scientific discourse more broadly (Fahnestock, 2003). Both text and images work together to represent each species. The visuals are used in different ways, including searching and matching birds that have been observed in the field to the images and studying the guide while not in the field. However, in the field, images may have primary importance to searching birders while the text is used secondarily to confirm an initial tentative identification, whereas when birders are studying the book at their leisure neither text nor images may dominate the other.

Digital interfaces differ from the traditional book-as-interface in that they afford more complex types of interactivity, thus making rhetorical design more complex and potentially giving the user a greater sense of engagement and agency (Carnegie, 2009). Therefore, our understanding of the interface needs to take into account the human agent who is using it and the conditions under which the agent does the interacting. Drucker (2011) contests the definition of an interface as something that simply facilitates the interaction of a disembodied user with information. Instead of the interface being like a window that a user looks through at the data, Drucker proposes that the interface is a dynamic space within which an embodied subject acts and thinks as the subject interacts with the data. As embodied subjects, we think with interfaces as we physically interact with them (Liu et al., 2007). With mobile technologies in particular, the device itself may seem to disappear, making the information seem present in embodied form (Farman, 2011). Interfaces help us make queries and access information but also shape the types of queries that we can form, the connections that we can make, and our interpretation

of our experiences. For example, several bird guide apps have features that make it easy to search for birds of a specific color. In contrast, no apps that were reviewed for this manuscript helped users search by behavioral features, such as regular tail wagging or flying in a loop and returning to the same perch (common behaviors of the Eastern phoebe [*Sayornis phoebe*]). For a novice birder using an app, this might reinforce the importance of plumage characteristics for identifying a phoebe, whereas a more experienced birder would likely use a more holistic approach to identification that emphasizes the bird's behavior. In other words, an interface is a dynamic space that provides affordances for both interacting with information and shaping how we make meaning from that information in the world. Stanfill (2014) describes this effect as “how *technically possible* uses become more or less *normative* through productive constraint” (p. 1062; emphasis added).

The dynamic space of interaction and cognition that interfaces provide their audiences is constructed by a variety of features, including functional, cognitive, and sensory affordances (Stanfill, 2014) and different types of interactivity: multi-directional information flow, manipulability, and presence—the feeling that the user is interacting socially or spatially with the computer (Carnegie, 2009). For bird identification apps, these features allow the app to function as an interface in three distinct ways: between the birder and the body of natural history knowledge that is referenced by the guide, between the individual birder and a broader birding community, and to help configure the birder's experience of being in the natural world. These three interface functions create a complex situation for audience agency, because audiences may approach the app—and the information that it conveys—in different ways. Thus, audiences may experience diverse opportunities for agency as the app helps them interface with distinctly different types of information.

Bird Identification Guides And Audience Agency

Audience agency has been discussed by a number of technical communication researchers as it relates to information presented using interactive and digital technologies (e.g., Koerber, 2006; Herndl & Licona, 2007; Miller, 2007; Graham, 2009; Cooper, 2011; Rawlins & Wilson, 2014). For example, Rawlins and

Wilson (2014) discuss interactive data visualizations as spaces of agency that are co-created by the visualization's designer and audience. In their discussion, the designer initially defines the space of agency, and the individual users may claim more or less agency as they interact with the visualization and make choices about the degree to which they customize their experience. Rawlins and Wilson therefore focus on user agency as a phenomenon that occurs during interaction itself.

In contrast to Rawlins and Wilson, Graham (2009) describes agency as the capacity to create change over time and discusses the importance of examining agency as a process before, during, and after action occurs. In this paper, I include both taking actions in one's surroundings and making cognitive changes in response to one's perceptions of one's surroundings to involve agency, following the enactive agency model described by Cooper (2011). Thus, users may take agential actions both during and after interacting with a bird guide app. Cooper describes enactive agency as "the process through which organisms create meanings through acting into the world and changing their structure in response to the perceived consequences of their actions" (p. 426). Audience agency that is facilitated and shaped by bird identification guides might encompass a range of events that includes developing a more complex understanding of how to identify a species' age based on its plumage, choosing a birding location based upon which species are likely to be present, and adopting accepted practices when birding (such as mimicking songs to attract birds only when this will not disturb them).

Three Interface Functions of Bird Identification Apps

Bird identification apps can serve as interfaces in different ways, depending on which of the overlapping interface functions—natural history knowledge, the birding community, or the broader natural world—audiences choose to prioritize as they interact with them. Following Rawlins and Wilson (2014), each of these potential interface functions creates a different space in which audiences may exercise agency as they interact with the app. Moreover, audiences experience agency in a real-world setting, such as when they modify their behavior or cognitive processes as a result of earlier interaction with the app. Understanding the different types of audience agency that may arise

with regards to bird guide apps therefore requires us to conceptualize the different agency spaces that audiences may experience. In the remainder of this paper, I describe how app design can frame the audience's experience of agency differently as they experience three interface functions.

Bird Identification Apps as an Interface with Natural History Knowledge

First, and perhaps most self-evidently, bird identification apps provide an interface between the birder and the body of natural history knowledge that the app references. In traditional book-based guides, this knowledge consists of visual representations and text descriptions of birds and their behavior, maps of species' ranges, and sometimes diagrams of their songs (Schaffner, 2011). Stanfill (2014) breaks down the affordances of interfaces into three categories, each of which contribute to the user's experience: functional affordances, which determine what the user can do with it an interface; cognitive affordances, which are aspects of an interface that relate to processing information, naming, and making meaning; and sensory affordances—design and layout choices, such as typeface, animation, overall visibility, or placement on a page.

Electronic bird identification apps take advantage of expanded digital storage and multimedia to provide audiences with more information, including information about bird habitat, behavior, and vocal recordings. This provides a broader base of natural history knowledge from which the user can draw when learning about birds and, in particular, making decisions about identification. One key cognitive affordance of identification guides is that they provide multiple visual comparisons to help the audience differentiate between similar species. *The Warbler Guide* app (2015), a specialized guide to a single group of small songbirds, offers users the ability to make comparisons between many species from the side, top, front, and bottom (Figure 2), as well as the ability to compare and rotate 3D computer models of species (Figure 3). This expanded sensory affordance for selecting and manipulating visuals may be helpful to audiences because many of these species look similar.

The manipulability of 3D models of birds; as well as actions that include swiping, clicking, and using the search function; comprise one of the three

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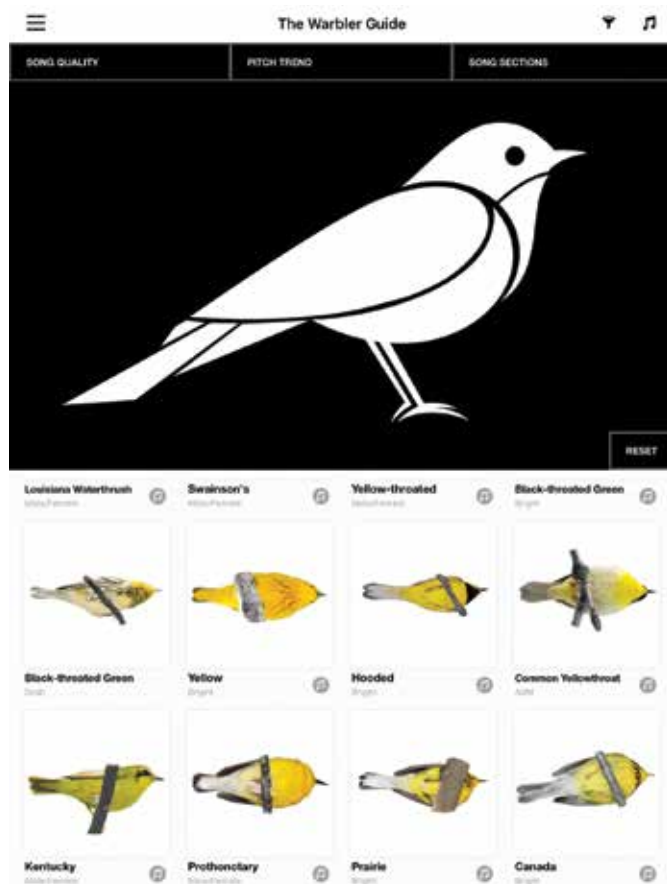


Figure 2. Screenshot from The Warbler Guide (Stephenson & Whittle, 2015) comparing the undersides of eight warblers, who are often observed from below. Used by permission of Princeton University Press.

types of interactivity that interfaces afford that are described by Carnegie (2009). Traditional book-based identification guides also have manipulability; books can be flipped through, written in, or tossed into a backpack. Electronic bird guides differ in that they afford multi-directional information flow and presence, as well as different types of manipulability. In *iBird Hawaii and Palau* (Mitch Waite Group, 2015), for example, illustration annotations can be turned on or off as birders encounter new species or become more confident in their identification skills (Figure 4). These types of affordances give audiences greater agential opportunities to customize their encounters with information while using the app. Moreover, they may facilitate different ways of learning about species that give audiences more agency when constructing their cognitive models after using the app.



Figure 3. Screenshot from The Warbler Guide (Stephenson & Whittle, 2015) showing 3-D rotatable models of two warbler species for comparison. Used by permission of Princeton University Press.

A final example of how bird guide apps affect the audience's experience of natural history knowledge is via the overall organization of information. Species are organized taxonomically in most book-based guides, so the reader either has to learn taxonomic organization, flip through the book, or look up a name in an index in order to find a particular species. While several bird guide apps retain this organizational logic, they let the user reorganize the order of species, as by overall shape (National Audubon Society, 2016), color (Stephenson & Whittle, 2015), or alphabetical order (e.g., Mitch Waite Group, 2015; Sibley, 2015). Although these features may help birders search for or identify a particular species, a larger cognitive implication is that novice birders may learn less about avian evolutionary relationships than in a print identification guide with less manipulability. Thus, novel app features that give

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Figure 4. Screenshot from iBird Hawaii and Palau (Mitch Waite Group, 2015) showing the overall interface with interactive features, and an annotated painting of the Wandering tattler or 'Ulili (*Tringa incana*). Used by permission of iBird.

users many choices about how to arrange information may inhibit them from forming an expert taxonomy-based understanding of avian natural history.

Bird Identification Apps as an Interface with the Birding Community

The second interface function of bird identification apps that I will discuss is that they connect individual birders to the broader birding community. In traditional book-based birding guides, the connection to community may be limited to an introductory discussion of proper behavior in the field; for example, enjoying birds while minimizing disturbance to them by only rarely mimicking their calls so as to draw them closer. Other community practices are communicated in more subtle ways. For example, some bird guides mention the practice of visiting landfills to search



Figure 5. Screenshot from Audubon bird guide: North America (National Audubon Society, 2016) showing the features of the app's starting screen. Used by permission of National Audubon Society.

for gulls while normalizing the un-naturalness of large numbers of gulls picking through trash for food (Schaffner, 2011). Additionally, the traditional taxonomic organization of bird guides crosses language boundaries and can contribute to cross-cultural communication agency. In a personal anecdote, once while birding in Japan, I met a Japanese birder and was able to communicate with him about birds using the taxonomic arrangement and Latin species names in my guidebook, even though neither of us could speak the other's language. If I had been using an electronic guide ordered in alphabetical order by English common name—a feature that may be used more frequently by inexperienced birders—our communication might have been encumbered by first rearranging the material, a process that might take several steps.

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Whereas book-based bird identification guides afford some connection between audiences and the norms and practices of the birding community, several apps help birders connect directly with one another via networked interactive features. This can be particularly evident in apps that are designed for beginning birders, such as the *Audubon Bird Guide* (National Audubon Society, 2016). This app's start screen gives birders the opportunity to search for recent sightings, report their observations, connect to a chat forum where they can ask questions, or donate to Audubon (a conservation organization), as well as look up information about birds (Figure 5). Several of these affordances might particularly give agency to beginning birders who are interested in connecting with other birders while also leading to specific expectations or community norms of sharing their observations with others or donating to bird conservation organizations.

Other interactive and networked features afford the app audience opportunities for agency by contributing to the birding community's knowledge. For example, although not all birders prioritize keeping a list of species they have seen, list-keeping, searching for rare species, and sharing observations with others are common practices (Sullivan et al., 2009). Various apps let birders record their observations in real time and share them either via the app or a larger online database. Because list information is geolocated, sharing this information with other birders allows app users to both gain recognition for finding a certain species and assist other birders in also locating that species. In *iBird Hawaii and Palau* (Mitch Waite Group, 2015), users can take photos and upload them to a photo sharing service, as well as access other people's photos of a species. This feature facilitates connection to the birding community by validating individual observations and helping develop a user-generated body of observational knowledge. Moreover, these features make it easier for amateur birders to contribute to professional ornithology as "citizen scientists," a practice that has historically been a part of birding (Battalio, 1998).

Bird Identification Apps as an Interface with the Natural World

A third interface function of bird identification apps is that they help birders configure their experience of being in the natural world. They do this in several ways. First, bird identification guides and apps focus on

identification. While using guides, birders learn that a primary purpose of observing birds is to identify them, rather than—for example—watching the behavior of a particular bird over time (Schaffner, 2011). Bird identification apps provide audiences with many tools that promote a scientific orientation to observing birds that involves classification and list-keeping, both as individuals and in concert with the broader birding community. Schaffner (2009, 2011) argues that this orientation promotes the viewing of birds in isolation from the rest of the environment and obscures the anthropogenic threats that many species face.

One way in which bird identification apps may afford birders increased agency in understanding the natural world and developing a more holistic orientation to the natural world is that they offer sensory affordances beyond the visual. Although traditional book-based bird guides focus on visual means of identification, sometimes effectively reducing a bird to the color of a single patch of feathers, many apps include the ability to play songs and calls. For example, *The Bird Song ID* app (Isoperla, 2015) uses a sound archive as the primary tool for identification, with images as a secondary tool and text as tertiary (Figure 6). This app also lets users record sounds and then try to match them to its archive for identification, though this feature is limited by the capabilities of the birder's electronic device. By developing an awareness

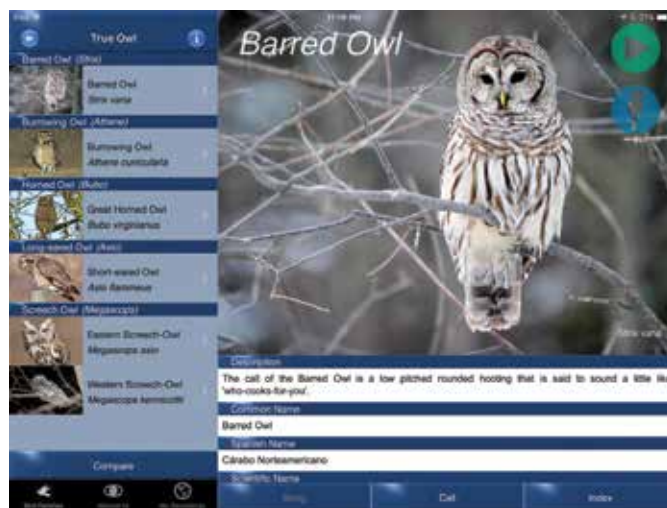


Figure 6. Screenshot from Bird song ID USA (Isoperla, 2015) showing the interactive features including the ability to compare photos, and calls of similar species and record calls. Used by permission of Sunbird Images.

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of vocalizations, birders can ascertain something about a bird's behavior and emotional state. For example, an app's sound recordings might include the sounds of baby birds begging food from their parents or an alarm call (e.g., as in Sibley, 2015; Figure 1).

The increased storage capacity of digital media in comparison to print affords birders other potential ways to understand birds aside from simple identification. For example, one of the main reasons that birders cite for selecting a particular guide is whether it uses photos (which show birds under natural lighting conditions) or paintings (which show idealized birds that capture all of the key identification marks; Lund, 2015). The inclusion of both paintings and photographs might help birders connect idealized representations with what they see under variable viewing conditions. Bird identification apps may include multiple images of birds that show diverse behaviors or illustrate birds interacting with their environments in ways that most book-based field guides do not (Schaffner, 2009), and, thus, not isolate birds from the natural world for the sole purpose of identification. Apps also offer more space to provide information about species that situates them in the natural world, such as their life histories, migration patterns, or whether they have threatened or endangered status, as in *iBird Hawaii and Palau* (Mitch Waite Group, 2015). By providing this information, an app gives its audience tools to articulate, for example, why large congregations of gulls may be found at a landfill because their natural food sources have been depleted by human activities.

Finally, one of the modes of interactivity that bird identification guides provide is presence, or the feeling that the user is interacting socially or spatially with the interface (Carnegie, 2009). In both book-based and electronic ID guides, the text is intended to be taken into the field and become an integral part of the birding experience, as well as potentially being read before or after birding. Thus, the guide has presence as part of the embodied experience of birding. As mentioned previously, the features that apps afford for building presence include the ability to input one's own information into a database and the ability to interact with other birders through the application. These features have two potential effects related to agency. First, social features may help novice birders ask questions in a sympathetic forum, decreasing their anxiety about participating in the birding community.

Second, these features also position the audience as agents who are producers of knowledge about birds and the natural world rather than simply consumers.

Conclusion: Audience Agency and Application Design

As the example of bird identification apps illustrates, audience agency in mobile applications occurs in a complex setting in which different spaces of potential agency overlap. Rather than the audience encountering a single space of agency while using the app (Rawlins & Wilson, 2014), I argue that the different ways in which the app functions as an interface creates multiple potential spaces of agency during use. These spaces may overlap. For example, I have described how taxonomic organization of information may afford opportunities to develop a more nuanced understanding of avian evolution as well as communicate about birds with speakers of other languages. Audiences may also experience real-world agency during or after using bird identification apps in a real-world setting. This conception of agency emphasizes the importance of rhetoric in understanding audiences' experience of the interface (Warnick, 2005) and suggests several considerations that may be of interest to application designers in general.

First, the example of bird identification apps illustrates that examining the different ways by which an application may rhetorically function as an interface can help technical communicators expand our understanding of their potential roles in audience agency. As suggested here, a single app can function as more than one type of interface, though there may be overlap between these different interface functions. Specifically, bird guide apps can mediate the birder's interactions with scientific information, with the birding community, and with the broader natural world. This example demonstrates the complexity of uses to which natural history apps are put and suggests that designers might obtain insights about the multiple dimensions of audience agency that apps facilitate by examining these uses. Designers of other types of apps might consider how other applications might function as interfaces in different ways beyond the topic at hand, broader ecological implications, and social interaction. For example, a botany app might provide an interface to traditional uses for plants, though there might be

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legal considerations with regards to edible or medicinal uses. Another consideration for designers is what specific features and affordances create the interface functions of any one particular app and to what extent they overlap. Although most apps focused on identification would likely share linked text and visuals, a geology app would provide information on chemical testing of rocks rather than sound files. Thus, features and affordances should be customized to help audiences better understand the app's subject matter.

Second, natural history apps are an example of a mobile genre that has always been mobile, with the book-based field guide as their antecedent. As such, this category of document has important differences from other types of documents that have been examined by technical communication researchers, such as tools for practicing medicine that are making the transition to mobile devices (Swarts, 2007). For designers of similar types of mobile applications, an understanding of the history of a particular genre might yield important information. For example, specific types of historical affordances and features mark bird identification apps as distinct from other applications, such as modular construction or multiple options for searching. By comparison, astronomy apps have different antecedents—charts and tables that emphasize the position of stars and planets at specific times. The expectations of audiences who are familiar with the conventions of book-based field guides may differ from those of audiences using apps whose conventions arose from documents originally created for non-mobile media.

Third, the example of bird identification apps points to the importance of text and visuals, as well as sound, for contributing to audience agency as it pertains to understanding birds and their behavior. Text and visuals, in particular, contribute both cognitive and sensory affordances with aesthetic and interpretive implications, such as the selection of photos or paintings to visually represent species. As mentioned previously, apps might include both types of image in order to give audiences the ability to move between both idealized and specific representations. For apps focused on other aspects of natural history, the relationship between text, visuals, and sound—as well as other possible multimedia features—might differ depending on the subject matter. For example, an app focused on identifying frogs might emphasize sound more than images, as it is easier to hear than see these animals.

Finally, this exploratory study leads to questions about how users actually experience agency when using bird identification apps, and whether and how different audiences experience apps in different ways. A primary design consideration is how we can identify and incorporate the interactive features that might give audiences types of agency that are useful for them. For example, novice birders may find value in connecting to a supportive community of birders who will answer their questions while expert birders may find more value in sharing their observations and contributing to building natural history knowledge. Thus, different audiences might find value in different interface functions of bird identification apps, and a well-designed app for novice birders would not simply be a “content-light” version of a more expensive app designed for experienced birders.

The issue of audiences' lived experiences of agency raises several questions that would best be answered by applied study of natural history apps. For example, are there specific types of real-world agency that all audiences find valuable? Might different audiences have disparate levels of interest in the interface functions of a particular application, and, if so, how can we design applications to better serve those audiences' interests? How do audiences actually perceive the interface functions and opportunities for exercising agency that an app provides? Finally, how do audience perceptions about app features and agency interact with price and reputation to guide choices about purchasing?

As when interacting with data in other types of rhetorical spaces (e.g., Rawlins & Wilson, 2014), not all users are likely to take advantage of the full suite of opportunities for agency that are afforded by a particular natural history app. In comparison to book-based field guides, apps can provide their audiences with enhanced access to information in different media formats, open up space for social sharing and interaction, and provide opportunities to contribute to “citizen science.” Looking at the diverse interface functions of natural history apps can suggest the types of audience agency that developers might facilitate when building such tools.

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YouTube Beauty Tutorials as Technical Communication

By Felicia Chong

Abstract

Purpose: With the increasing popularity of YouTube beauty videos, this study extends previous research on YouTube instructional videos by investigating the common characteristics of the 10 most-reviewed makeup and hair tutorials to determine their similarity to or differences from good instructional videos.

Method: Using a deductive coding method, I analyzed the 10 most-viewed beauty tutorials based on Swarts' (2012) best practices for creating instructional videos and Mackiewicz's (2010) assertion categories of expertise.

Results: A majority of the videos followed best practices, such as including an introduction, beginning with a "promise" or a clear objective, incorporating verbal instruction, being strategically redundant, and using a combination of text annotations, audio, and/or still images to complement the video. However, a lack of confidence and quality in most of the videos suggest that the creators did not rehearse their scripts, nor did they use the recording and editing tools effectively. None of the creators seems to provide any reassurance to the viewers or promote a sense of their self-efficacy. In terms of asserting their credibility, the majority of the creators did not make any explicit assertions about their relevant role, product-specific experience, or familiarity with related and relevant products.

Conclusion: Although best practices, such as having a clear objective and using verbal instructions, should be followed, instructional video designers should also consider additional factors, such as truthfulness and accuracy, accessibility, kairos, addressivity, personal narratives, and humor.

Keywords: assertions of expertise, beauty, instructional video, makeup tutorials, YouTube

Practitioner's Takeaway:

- Popular YouTube beauty tutorials do not follow all the best practices for "good" instructional videos. For example, mistakes could be considered assets of authenticity in instructional videos.
- Popular instructional videos do not necessarily have a massive following or a large number of subscribers.

Small channels are capable of producing popular videos.

- Factors such as truthfulness and accuracy, accessibility, kairos, addressivity, personal narratives, and humor could play an important role in the effectiveness and popularity of YouTube instructional videos.

YouTube Beauty Tutorials

Introduction

With the advent of Web 2.0 technology, there is now an abundance of user-generated online instructions posted on websites and platforms; such as WikiHow, eHow, Instructables, and YouTube; which are created by both amateurs and experts. These instructional videos are more appealing and “seductive” than written manuals because they are more “informal,” “frequently entertaining,” and “deliberately encouraging, sending assurances that the viewers can easily apply the lessons” (Swarts, 2012, p. 196). Morain and Swarts (2012) and Selber (2010) argued that these instructional videos are quickly emerging as a new form of technical communication, where “nearly everyone on the Internet is a technical communicator—or at least has the potential to be one” (Selber, 2010, pp. 98–99).

Thus, in the last five years, online instruction as a genre has received increased attention in technical communication scholarship. In addition to our literature on conceptualizing, analyzing, and assessing instructional videos (e.g., Morain & Swarts, 2012; Selber, 2012; ten Hove and van der Meij, 2015; van Ittersum, 2014), we have best practices and guidelines on creating instructional videos (e.g., Pflugfelder, 2013; Swarts, 2012; van der Meij & van der Meij, 2013); even textbooks such as Markel’s *Technical Communication* (2015) are including strategies on creating instructional videos.

However, there remains insufficient research in the field that focuses on information delivery and presentation of ethos in popular YouTube beauty videos. For example, what makes these beauty videos popular? What makes these videos “good” instructional videos? Do the creators follow our best practices and guidelines on creating instructional videos? How are they different from technical communication instructional videos such as software training? This study aims to extend previous research on YouTube instructional videos by exploring these questions.

It is important to note that this study does not intend to provide a “how-to” guide for creating YouTube beauty videos, nor does it claim that beauty videos should serve as models for instructional or training videos. Rather, the goal of this study is to examine popular YouTube beauty tutorials and explore what technical communicators can learn about information delivery and presentation of ethos that

could be potentially useful in creating instructional or training videos.

In this article, I begin by defining YouTube beauty videos and their popularity. Then, I describe an exploratory qualitative study I conducted in 2017 to analyze the 10 most-viewed beauty tutorials, followed by results and discussion. In the conclusion, I discuss implications and strategies for technical communication scholars and practitioners.

YouTube Beauty Videos

Women are the primary content creators of beauty tutorials on YouTube, the leading video-on-demand platform that is widely used by over a billion users (“YouTube for press,” n.d.). According to a study conducted by Pixability, a company that specializes in measuring YouTube statistics for advertisements and marketing, YouTube’s 1.8 million beauty videos have accumulated over 45.3 billion total views (Pixability, 2015). Tutorials, defined as “detailed videos that walk a viewer step-by-step through how to create a specific look” (Pixability, 2015, p. 32), make up 45%, which is the majority of all YouTube beauty videos.

The content creators, also known as YouTubers or influencers, are providing beauty tutorials focusing on hair, full-face makeup, nails, and skincare. Most of them are not professional makeup artists by training or by trade. They often establish their YouTube channels as college students who rely on their own user knowledge of makeup and hair. As evidenced by millions of channel views and subscribers, these creators are now recognized broadly as “beauty gurus,” whose knowledge and skills are highly valued (e.g., their popularity far outweighs the videos that are produced by cosmetics companies). They have not only attained celebrity status (Ault, 2014), but many have also become YouTube employees through YouTube’s Partner Program and many of them have become collaborators with major cosmetics brands, such as CoverGirl and Lancôme; some creators have even created their own makeup lines (Glamour, 2013). Although their success suggests that they may be experts in creating popular YouTube videos, it is important to note that most of them are not professionally trained or working as makeup artists or experts.

Popularity of YouTube Videos

Instruction sets have long been considered a prominent genre in technical communication. Scholars such as

Connors (1982) and O'Hara (2001) argued that the field blossomed as a result of increased uses of military technologies during World War II. Since misusing military technologies could cause injuries and even deaths, there is naturally a strong need for clear and effective communication, coupled with emphasis on efficiency and accuracy in using complex systems (Johnson, Salvo, & Zoetewey, 2007).

With this history, it is unsurprising that technical communication scholars are concerned about producing clear, effective, and efficient instructional videos that are generally described as “good.” For example, Morain and Swarts (2012) and Swarts (2012) used the term “good” to refer to such videos and to distinguish them from “average” and “poor” videos. After analyzing YouTube videos, Swarts (2012) established that a “good” instructional video begins with an introduction that frames the lesson to be learned, spends more time demonstrating steps (doing and explaining) than either doing or explaining along, delivers content whose message is easy to locate and access, easy to understand and utilize, and is engaging and reassuring.

“Popularity” was not addressed as a characteristic in Swarts' (2012) work. In fact, popularity is an under-explored feature of online instruction sets. Although ten Hove and van der Meij (2015) developed a formula for gauging YouTube popularity rating, their data set was based on a specific genre of YouTube videos that focused on declarative knowledge development. They observed that popular videos essentially scored higher, in terms of physical features (i.e., resolution, visuals, verbal and sound, and tempo), than average or unpopular videos. Although their work is certainly useful as a starting point for creating popular as well as good videos, it does not explicitly address the “good” rhetorical features of instructional videos that Swarts (2012) described in his study.

To what extent do “good” and “popular” overlap? Why is this important for technical communicators? First, popularity affects what viewers find and watch on YouTube. Since YouTube constantly changes its algorithms, it is difficult to find out how popularity is determined based on the little statistical information that is provided by YouTube (each YouTube video shows the number of “likes” and its total, lifetime views). At the time of writing, YouTube uses a thumbs-up (Like) or thumbs-down (Dislike) rating system and does not provide an official popular ranking for various

categories such as beauty, sports, and music. Even if such official rankings were provided by YouTube, the numbers could change or fluctuate daily, even by the minute, due to the nature of this medium.

In addition, when viewers log in to their YouTube accounts, they are presented with a list of videos that are gaining popularity in the “Trending” tab on the homepage. YouTube claims that “Trending” videos are chosen based on “viewership data [and] the wisdom of top curators across the web” (“About YouTube trends”) and does not reveal its actual algorithms. When viewers search for specific videos using keywords, the results are presented in a seemingly random manner (i.e., not chronological, or based on total views, or the number of subscribers for that channel). Viewers then have to change the filters (e.g., upload date, type, duration, features) or the keywords to narrow down the results. In other words, a “good” instructional video does not necessarily show up at the top of the results list or on the “Trending” page.

Second, popular beauty videos are created by amateurs—not experts or companies. Out of the 20 most-viewed beauty videos of all time (Pixability, 2015), only four were created by hair and cosmetics companies such as Schwarzkopf (ranked 13), Pantene (ranked 17), Lancôme (ranked 18), and Dior (ranked 20). The rest of the top videos were mostly created by the young women whom I described earlier. Although, as rhetorically savvy technical communicators, we frequently employ ethos as one of our rhetorical strategies, the total views of top videos often exceed the number of subscribers for those channels, which means the viewers may not be motivated by their knowledge of the creators' educational background and experience in beauty. This suggests that viewers are not necessarily watching these top beauty videos due to the creators' professional appearance or expertise.

Beauty as Women's Work and Technology

Since most of these beauty content creators are not professional makeup artists and purportedly do not work for cosmetics companies, they resemble the women Hallenbeck (2012) defined as “extrainstitutional technical writers,” amateurs who share their user practices on YouTube. If technical communication is defined as “the exchange of information that helps people interact with technology” (Gurak & Lannon, 2011, p. 3), and if these beauty content creators are

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considering YouTube as a workplace, where they engage in rhetorical discourse by communicating information about using (beauty) technology, then beauty tutorials are technical communication.

Although there is technical communication research that focuses on women's work and technologies (e.g., Durack, 2004; Rohan, 2001; Tebeaux, 1997), beauty has rarely been discussed as a form of rhetorical and technical knowledge that requires attention in the field of technical communication. At first glance, beauty may resemble other women's activities that Foss and Foss (1991) refer to, such as gardening, baking, and caregiving; which are often seen as non-rhetorical or insignificant communication in male-dominated society. Beauty may appear to belong to the "private" realm, where women "perform" beauty in the intimacy of their homes.

In a *Forbes* article, Sorvino (2017) estimated the global beauty industry to be worth \$445 billion in sales. The various products and techniques used in the beauty industry, many of which were invented by women, certainly require inventions, technological skills, and competence with technology. In fact, applying makeup and braiding hair are "tactile" activities that are difficult to describe or learn from a book or a manual, but these beauty content creators manage to make tacit knowledge explicit without necessarily having the ethos of an "expert" (i.e., without all the trappings).

Therefore, I argue that as technical communication scholars and practitioners, it is important for us to answer the calls of Durack (2004) and Korber (2000), who challenged us to expand our definition of technology so that we can include contributions of women and of Hallenbeck (2012) who urged us to investigate the cultural work of extraorganizational technical communication. Technical communication scholars and practitioners should pay attention to these extrainstitutional, user-generated tutorials because YouTube is essentially a "test bed" for our instructions. The feedback we receive from viewers, whether it is in the form of a comment, a like, or a view, points to user preference. Even Swarts (2012) concluded that "users know what they want" and encouraged us to "generate lots of highly specific content and let the users sort it out" (p. 205).

With these perspectives in mind, I conducted an exploratory qualitative study in 2017 on YouTube beauty tutorials that was guided by two main research questions:

RQ1. How do these popular beauty videos follow the best practices that Swarts (2012) developed? What are the common practices or characteristics of these videos?

RQ2. As most of the top beauty content creators are not professional makeup artists, how do they assert their expertise or establish their ethos, as described in Mackiewicz's (2010) assertions of expertise?

The primary goal of this preliminary study is to lay the groundwork for investigating the characteristics of popular beauty tutorials and exploring their implications for creating effective instructional videos.

Method

For this study, I followed the general framework for qualitative content analysis, where I identified the sample, developed a coding protocol, and analyzed the data. I selected and analyzed the 10 most-viewed beauty videos as of 2015. The total views are based on Pixability's (2015) report, which is chosen as the criterion because "the number of times a video has been seen [signifies] its popularity" (ten Hove & van der Meij, 2015, p. 52). These videos, coincidentally, are tutorials, which most closely resemble the instructions genre in technical communication; they are an example of popular technical communication artifacts.

Table 1 below lists the 10 most-viewed videos ranging from 18 million to 49 million, as reported by Pixability (2015). I added the "purpose" column to show the content of the video and put the creators' user names in parenthesis. All these videos were created by women, with the top two coming from the same creator or channel. Nine videos are makeup tutorials and one is a hair tutorial ("Waterfall Braid"). To avoid confusion, I refer to these women as "creators" instead of by their real names since some of them are still referred to by their user names. Initially, YouTube had required users to create a user name; but starting in 2012, users could display their real names ("Choosing how you are seen on YouTube," 2012), which is why some channels are still showing user names while others are showing real names.

As seen in Table 1, the content of these videos differs from the YouTube videos that have been analyzed in previous technical communication literature. For

example, ten Hove and van der Meij (2015) analyzed YouTube videos that focus on factual and conceptual knowledge development (e.g., “Water-Liquid Awesome”), while Swarts (2012) focused on “how-to” videos in software development (e.g., “Movie Maker Video Editing Tutorial”). The four physical features (resolution, visuals, verbal and sound, and tempo) that ten Hove and van der Meij chose were measured quantitatively, while Swarts’ 14 best practices are more comprehensive and qualitative in nature in that he included both the physical and rhetorical features of the videos.

Therefore, in this preliminary study, I chose Swarts’ (2012) best practices as my coding categories, in which I looked at each video’s rhetorical structure (introduction, steps, conclusion) and its communication design features, which include its physical design (elements concerned with access, viewability, and timing), its cognitive design (elements concerned with accuracy, completeness, and pertinence), and its affective design (elements concerned with confidence, self-efficacy, and engagement).

In addition, I used Mackiewicz’s (2010) categories and types of assertions of expertise in online reviews as another reference for analyzing how beauty content creators, most of whom are not professional makeup artists, asserted their expertise in the videos. Mackiewicz noted that “whether consciously or unconsciously, readers of online reviews look for signs that reviewers have credibility” (p. 7). I argue that similar to readers of online reviews, YouTube viewers also look for signs of credibility, as I presume that these viewers are watching beauty tutorials, because they want to achieve the same looks. Although scholars such as Selber (2010), Swarts (2012), ten Hove and van der Meij (2015), and van der Meij and van der Meij (2013) have written extensively about various characteristics of online instructions, their work does not explicitly address the creator’s credibility or expertise. Hence, even though Mackiewicz’s study does not specifically focus on online tutorials, I found her categories to be relevant and adequate in analyzing these beauty videos.

Table 1. Ten most-viewed beauty videos according to Pixability’s (2015) report

Rank	Video Title	Purpose	Creator
1	Lady Gaga Bad Romance Look (2010)	How to create Lady Gaga’s makeup look in the music video “Bad Romance”	Michelle Phan
2	Lady Gaga Poker Face Tutorial (2009)	How to create Lady Gaga’s makeup look in the music video “Poker Face”	Michelle Phan
3	Acne Foundation Routine for Cystic, Scaring, Oil and Blackheads (2010)	How to put foundation on a face that has cystic acne	Cassandra Bankson (diamondsandheels14)
4	Waterfall Braid (Self) (2010)	How to create waterfall braid on your own hair	Mindy (Cutegirlhairstyles)
5	Angelina Jolie Makeup Transformation (2011)	How to create a makeup look that resembles Angelina Jolie	Promise Phan (dope2111)
6	Makeup Tutorial: How to Fake Abs (2008)	How to create the look of fake abs using makeup	Elessa Jade (pursebuzz)
7	Glitterati Lip Tattoo & Lip Word Tattoo (2011)	How to put temporary lip tattoo sticker on your lips	Kandee Johnson
8	Unzipped Zipper Face Makeup (2011)	How to create a Halloween look using a zipper and makeup	Cristal Rodriguez (cristalprostlyer)
9	Anime Eyes with MAC (2011)	How to create anime eyes using only MAC (cosmetics company)	Farida Lam (itsthefa)
10	9 Different Eyeliner Looks (2013)	How to create nine different eyeliner looks using a brush and gel eyeliner	Lupe Netro (naturallybellexo)

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The deductive coding process was iterative: After reviewing the descriptions for best practices, I watched the 10 videos once without coding to make sure I understood the content. Then, during the first pass of coding, I coded the videos according to the best practices. During the second pass of coding, I re-watched the videos to make sure the codes were accurately assigned. Similarly, I reviewed Mackiewicz's (2010) assertion categories before watching the videos during the third pass of coding.

Results

RQ1. How do these popular beauty videos follow the best practices that Swarts (2012) developed? What are the common practices or characteristics of these videos?

Table 2 shows coding results based on Swarts' (2012) best practices. It is important to emphasize that "most of the features that Swarts discussed hinged on interpretation" (ten Hove & van der Meij, 2015, p. 50). Therefore, I discuss the significance of the results in terms of "commonly followed best practices" and "deviations from best practices" in subsequent paragraphs.

Commonly Followed "Best Practices"

Swarts (2012) recommended starting the instructional video with stating "an overall structure, a goal, and a set of objectives" (p. 203) and argued that introduction is important to frame the video. Eight of the 10 reviewed videos (80%) included a verbal introduction. The other two videos (20%) began without any explanation or overview of the instructional goals:

- In "Angelina Jolie Makeup Transformation," the creator began the video by showing a short clip

Table 2. Coding results for the 10 most-viewed beauty videos based on Swart's (2012) best practices

Swarts' Best Practices	Top 10 Beauty Videos										
	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	Total
Make the rhetorical structure of the video visible and persistent	x	x			x		x			x	5
Test the timing of the audio/video to ensure ease of following	x	x	x	x	x	x	x	x		x	9
Use the recording and editing tools well										x	1
Record in HD or near HD quality										x	1
Consider how modes of communication complement one another	x	x			x		x	x		x	6
Get it right the first time	x	x	x	x	x	x	x	x	x	x	10
Start with an overall structure, a goal, and a set of objectives	x	x	x	x		x	x	x		x	8
Think in cinematographic terms	x	x	x	x	x	x	x	x	x	x	10
Use strategic redundancy	x	x			x		x	x		x	6
Rehearse the script	x	x			x						3
User test a sample of audio for engagement	x	x	x	x	x	x	x	x		x	9
Recognize that your credibility is being scrutinized	x	x		x	x	x	x				6
Seduce the viewer	x	x	x	x		x	x	x		x	8
Reassure the viewer											0
Total	11	11	8	8	9	8	10	9	2	11	

of the finished look and the text “Angelina Jolie Tutorial” on the screen; then, she proceeded with the first step by saying, “First, apply a light-tone liquid foundation...”

- In “Anime Eyes with MAC,” the creator did not include any verbal instructions; she began the video by showing a short clip of the finished look and proceeded with showing the first product used in her makeup look.

Good videos “almost always started with a statement about what viewers would learn or accomplish” to “seduce the viewer” (Swarts, 2012, p. 204). In eight out of the 10 videos (80%), the creators began with a “promise.” For example, they introduced their videos with phrases such as “This tutorial will show you how to replicate her style” (“Lady Gaga’s Bad Romance Look”), “I am going to show you how to get these crazy googly, Lady Gaga eyes” (“Lady Gaga’s Poker Face Tutorial”), and “This is how you will dazzle up with some lip jewels” (“Glitterati Lip Tattoo”).

In terms of cinematographic quality, all 10 videos (100%) were filmed in a home setting, such as a bedroom, living room, or bathroom. All creators (100%) used medium shots (showing the creators from waist-up or shoulder-up). All nine makeup videos used close-up shots for the products used so that viewers can see the details (e.g., product name, color, number); all nine makeup videos used multiple shots and slide transitions, and they were filmed with a stationary mounted camera. The hair tutorial video (“Waterfall Braid”) was a long take (i.e., an uninterrupted shot) from a hand-held camera. This was the only video where another person (other than the creator) was holding the camera and recording the footage.

When it comes to providing verbal instructions, Swarts (2012) advised that “audio should slightly precede the video” (p. 202). Verbal instruction was used in nine videos (90%): Six videos (60%) used live talk or narration, and three (30%) used voice-over (i.e., recorded after the video was filmed) to describe the steps. “Anime Eyes with MAC” was the only video that included only background music and no verbal instruction.

Six videos (60%) used a combination of text annotations, audio, and/or still images to complement the video. These were also the same six videos that used strategic redundancy. The most basic form of these two qualities can be seen in “Unzipped Zipper Face,”

where the creator overlaid the list of necessary products on the screen as she explained the products. She also used strategic redundancy when repeating the words “a smidge” to emphasize that one only needs to use a little bit of fake blood to create the look of bruised skin around the zipper. Similarly, in “Glitterati Lip Tattoo,” the creator combined verbal and written instructions by putting the text “hold it on there for a little bit” on the screen as she said those words and held the lip tattoos to her lips. The more advanced version of these qualities can be seen in “9 Different Eyeliner Looks”: The creator used a “picture-in-picture” video effect, where she overlaid the video clip of the finished eyeliner look on the video clip where she was creating that look. This enables viewers to see the finished look and the demonstration at the same time.

Deviations from “Best Practices”

Since the videos were posted between 2008 and 2013, the majority of the videos were lacking in visual quality (i.e., not recorded in HD, not recorded or edited well). These are the most significant examples:

- In “Unzipped Zipper Face,” the persistent hum stemming from the creator’s microphone affects the clarity of her voice.
- In “Lady Gaga Bad Romance Look,” the poorly lit, yellow lighting in the room affects the accuracy and brightness of the colors used in the makeup look.
- In “Waterfall Braid,” the shaky hand-held camera recording was not ideal in that the viewers cannot clearly see the braiding process.

In comparison with the other nine videos, “9 Different Eyeliner Looks,” posted in 2013 (i.e., the newest video), is the only video that adequately followed these two best practices.

The rhetorical structure of five videos (50%) was clear in that the viewer could see text, titles, or black frames that indicate where the creator is in the process of putting on makeup or braiding hair. The creators of the remaining five videos (50%) might assume that their viewers would watch the video in its entirety, since they did not provide any means for viewers to skim the content.

Swarts (2012) stressed that confidence is important, as “a lack of seriousness, halting delivery, trailing off at the end of sentences, and monotonous delivery can easily lead a viewer to question just how knowledgeable

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the narrator is” (p. 204). The top two videos (“Lady Gaga’s Bad Romance Look” and “Lady Gaga Pocker Face Tutorial”) are the most polished in that the creator seemed to read from a script, the slides with text were timed perfectly, and the transitions between clips were smooth. However, the other eight creators sounded casual, at times monotonous and even unprofessional, which I will further elaborate below.

Although Swarts (2012) recommended that creators rehearse their script to “speak more confidently, flawlessly . . . to inspire trust and motivation” (p. 204), it was clear that only the three videos that used voice-over narration sounded well-rehearsed. In the six videos that included live talk or narration, the creators did not edit out their verbal mistakes to make their scripts sound flawless. For example, in “Acne Foundation Routine,” the creator mispronounced words like “soon” (which she corrected immediately) and rephrased an awkward sentence without removing it from the clip. In “Unzipped Zipper Face,” the creator sounded monotone and frequently used filler words like “ummm” and “uhh” and “blah blah blah,” which are defined by Merriam Webster as “a sound, word, or phrase used to fill pauses in speaking” (“Filler”), or casual language like “my bad,” “duh,” and “whatever,” or even foul language.

Furthermore, the tone of the creator did not always exude confidence. In “Acne Foundation Routine,” the creator sounded upbeat for the most part, but she specifically addressed her lack of self-confidence due to acne, and how baring her face in front of the camera made her feel extremely insecure and self-conscious. It was clear that she was uncomfortable, to the point where she seemed teary-eyed. She also apologized when some of her footage disappeared from the clip because her camera battery died. In “9 Different Eyeliner Looks,” the creator apologized that her eyes were irritated (since she had to apply and remove eyeliner to her eyes many times to film the video), and that she hoped her viewers did not mind that she did not talk “that much” in the video.

The timing and pacing of the videos also vary. In “Acne Foundation Routine,” the creator spent almost 20% of video time at the beginning sharing her experience with acne before getting into the steps of putting on foundation: In an almost 11-minute video, she did not show her first product until after two minutes and 18 seconds. This is a stark contrast when

compared to “Angelina Jolie Makeup Transformation” and “Anime Eyes with MAC,” the two videos that I described earlier, which did not include any verbal introduction and jumped right into the tutorials. Nine videos (90%) showed clips in real time; in “Anime Eyes with MAC,” the creator used the “speed-up” function, which implies that she might be more concerned about the length of the video and less on the ease of viewers following her steps.

“Getting it right the first time” (Swarts, 2012, p. 203) is a best practice that is difficult to determine in these videos. Makeup and hair are not an exact “science” in that there are multiple approaches and techniques to creating the same look. In most videos, viewers do not know what to expect until the steps are completed, even though they may have already seen the “finished look” at the beginning of the videos. “Mistakes,” such as repetition, do occur in these videos. For example, in “Glitterati Lip Tattoo,” the creator repeated the same verbal instructions on how to remove the lip tattoos in two different, back-to-back clips. In “Unzipped Zipper Face,” the creator repeated multiple times that she is a “female,” so she would have makeup that she could use to cover up the zipper (while “Mike,” the person she created the video for, may not have makeup at the ready). Creators of “Glitterati Lip Tattoo” and “How to Fake Abs” included bloopers (or outtakes) at the end of their videos to show viewers where or how they have “messed up” during filming, which suggests that they see these clips as assets rather than mistakes.

Finally, none of the videos seems to reassure the viewers or promote their sense of self-efficacy. There were no “soothing reassurances” (Swarts, 2012, p. 204) to encourage the viewers that they can complete the makeup look or create the braid.

RQ2. As most of the top beauty content creators are not professional makeup artists, how do they assert their expertise or establish their ethos, as described in Mackiewicz’s (2010) assertions of expertise?

During the last pass of coding, I identified instances where creators described or displayed their expertise based on Mackiewicz’s (2010) assertion categories and subcategories listed below:

- Assertions of product-specific experience

- Regular experience with using the product
- Testing of the product
- Assertions of familiarity with related and relevant products
 - Familiarity or ownership of previous versions of the specific product under review
 - Familiarity or ownership of comparable product model
 - Familiarity with the brand and brand's products
- Assertions of a relevant role
 - Received or receiving formal training or education relevant to the product
 - Relevant experience from a hobby
 - Employment in a profession relevant to the product
 - Association with someone who has expertise relevant to the product
 - Conducted research on the product

Although all nine creators may appear to have regular experience using the products they showed in the videos, only three creators made explicit assertions about their product-specific experience or their familiarity with related and relevant products:

- In “Acne Foundation Routine,” the creator provided mini reviews of the primer and foundations she used (e.g., why she preferred using them, how long she had been using the products).
- In “Glitterati Lip Tattoo,” the creator included clips from a previous video showing her wearing the same lip tattoo in a different design and described her experience wearing them (e.g., the longevity of the lip tattoo on her lips) and removing them from her lips.
- In “Waterfall Braid,” the creator indicated that she was familiar with the braiding technique by stating that she had created the braid on another person's hair.

Out of the nine creators for the top 10 videos, only three are self-proclaimed professionally-trained makeup artist: Kandee Johnson, Elessa Jade “pursebuzz,” and Crystal Rodriguez “cristalprostlyer.” However, none of the creators makes any assertions of their relevant role in those videos. In fact, at the time of writing, these women do not even state their role or experience in beauty on their “About” page on YouTube.

Discussion

The results shown in Table 2 indicate the majority of these content creators follow Swarts' (2012) best practices, such as including an introduction, beginning with a “promise” or a clear objective, incorporating verbal instruction, being strategically redundant, and using a combination of text annotations, audio, and/or still images to complement the video. However, they do not appear to aim for a slick, well-rehearsed, and effectively-edited production that is advocated by Swarts (p. 204).

In other words, a video does not necessarily need to be “good” to be popular, the way Swarts (2012) defined “good” instructional videos. More specifically, the creators do not necessarily present themselves or their knowledge confidently, rehearse their script, or edit out all their mistakes. Thus, the “seduction” (p. 204) of these videos may not lie in the professionalism of these creators; instead, these creators acted more like friends or sisters who share beauty tips in the comfort of their homes. For example, although filming at home may appear to be less professional, since professional makeup artists (such as Lisa Eldridge) film their beauty videos in a studio setting, these home-looking backgrounds do evoke a sense of coziness and “real-ness” that viewers can easily relate to.

Notably, the majority of these beauty content creators did not make explicit assertions of expertise, with only three out of the nine creators being explicit about their experience and familiarity using with the products they showed in the video. Mackiewicz (2010) pointed to the “waning authority and influence of professional expertise” (p. 21), as her study shows that reviewers who asserted their professional status or employment were not perceived as having more expertise compared to the other types of assertions. This is evident in the videos created by the three self-proclaimed makeup artists, as they did not describe or assert their role as experts in those videos. Even though three of these creators are self-proclaimed makeup artists, all eight creators appeared to be makeup enthusiasts who are passionate about sharing their interests rather than showing viewers the “correct way” to create a makeup look. In fact, in “Acne Foundation Routine,” the creator repeatedly said that she changed her routine weekly, which implies that the foundation routine she showed is not the “only” way.

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Michelle Phan's channel and videos are a prime example of how YouTube content creators assert their expertise using different techniques from the reviewers that Mackiewicz (2010) analyzed. According to Mackiewicz, "the extent to which laypeople are taken seriously...depends on the extent to which they can construct...an expert and trustworthy persona and, thus, credibility" (p. 22). On this top 10 list, Michelle Phan's channel has the most subscribers (about 8.9 million at the time of writing), but she did not explicitly assert her perceived expertise in her two videos. Phan, in fact, is famous for having the rags-to-riches story, where she created beauty videos as a design school student and became a successful entrepreneur and beauty mogul (Shoket, 2017). Mackiewicz added that "preconfigurations of credibility" (p. 8), or the status of the reviewer, could further promote the reviewer's credibility. Thus, in this case, Phan's life story, combined with her high number of subscribers, help construct a trustworthy persona that secures her ethos as a beauty guru.

Furthermore, I noticed additional patterns or concerns in these videos that were not addressed by Swarts (2012) and Mackiewicz (2010), on which I will elaborate below.

Personal Narratives

In his analysis of instructions on Instructables.com, van Ittersum (2014) found that "one of the most striking features . . . is the mixture of personal narrative with, or to the exclusion of, procedural discourse" (p. 235). Similarly, four of these top 10 videos (40%) included personal narratives:

- In "Glitterati Lip Tattoo," the creator described how she wore the American flag lip tattoo during a Fourth of July (i.e., America's Independence Day) celebration and was constantly stopped and complimented by strangers on the street.
- In "Acne Foundation Routine," the creator spent over two minutes at the beginning of a 11-minute video describing her struggle with acne.
- In "Lady Gaga Poker Face Tutorial," the creator stressed that "I am not trying to be Lady Gaga, nor do I think I look like her. I am just having fun replicating her style."
- In "Unzipped Zipper Face," the creator shared how she would wear the makeup look differently for Halloween.

Humor

Humor, which could also be considered to include a "lack of seriousness" (referring to Swarts' term, p. 204), was found in these beauty tutorials. For example, in "Glitterati Lip Tattoo," the creator showed clips from a previous Fourth of July video that were supposed to be humorous, and she joked about how the lip tattoos imprinted with the word "single" could be used at divorce parties. Similarly, in "Unzipped Zipper Face," the creator made a self-deprecating joke by putting text on the screen stating her overuse of the word "okay."

It is worth noting that in recent years, humor is increasingly used in corporate-produced instructional videos, namely airline safety videos used by Virgin Airlines and Delta Airlines, to attract passengers' attention (Seneviratne & Molesworth, 2015). It may be time for us to revisit Cohen's 1992 article on how to "humorize to humanize" to (re)consider how humor may have a rightful place in the world of instructions and technical communication.

Kairos

As one of the most widely used social media platforms, YouTube is the place where latest trends can be found. Thus, the popularity of these beauty videos could have been affected by the kairotic moments in which they were posted. The "Unzipped Zipper Face" video was posted in September 2011, a month before Halloween, which is celebrated on October 31 in many countries by children and adults dressing up in costumes of fright and fantasy. In fact, it is common for viewers to look for "Halloween makeup look" videos during that time of the year. The "Lady Gaga Poker Face Tutorial" video was posted in 2009, after the song "Poker Face" was released in 2008. Similarly, the "Lady Gaga Bad Romance Look" video was posted in 2010, after the song "Bad Romance" was released in 2009. The "Glitterati Lip Tattoo" video was posted in 2011, which is when the company that created the lip tattoos was founded.

Addressivity

Addressivity is defined by Bakhtin (1986) as speech that is directed to a specific audience. Although the audience for a global social media platform like YouTube could be diverse and massive, the creators were intentional about addressing their intended audience in their videos, which I found in six (60%) videos:

- In “Lady Gaga Poker Face Tutorial,” the creator said the “sexy silver eyes” that she was creating were requested by “so many” of her viewers.
- In “Acne Foundation Routine,” the creator addressed her viewers as: “If you guys have acne, or even if you don’t have acne and you just want really pretty skin . . . I hope this helps you.”
- In “Waterfall Braid,” the creator referred to “a ton of emails” that she had received because her viewers wanted to know if they could create the waterfall braid on their own hair (instead of having someone else braid their hair).
- In “How to Fake Abs,” the creator began the video with questions such as “Is it your first time at the beach this year, and you don’t want to go out in your bathing suit because you are afraid of what others will think of you?” She was clearly targeting women who feel insecure about going to the beach or the pool because they do not have “abs.”
- In “Glitterati Lip Tattoo,” the creator suggested different uses for the lip tattoos with words on them: “There is this one that says, ‘kiss,’ maybe good for [a] New Years’ [party]? Hey, maybe you are single and you want to announce it to the world?”
- In “Unzipped Zipper Face,” the creator kept addressing a friend called “Mike,” as she repeatedly said, “You are a dude.” This suggests that she made the video specifically for her friend or family member to learn how to create this makeup look.

Interestingly, even though these creators addressed a specific audience in their videos, they did not appear to reassure the viewers or promote their sense of self-efficacy, which is one of Swarts’ (2012) best practices for creating instructional videos.

Community and Popularity

With the increasing popularity of YouTube beauty videos, there is a massive following for popular channels such as Michelle Phan’s. This culture is commonly known as the YouTube “beauty community,” in which many viewers subscribe to these channels not only to gain knowledge about beauty and to make friends but also to support the creators financially, as the highest paid creators could make up to \$15 million a year for their YouTube videos (Berg, 2016).

Because Pixability ranked the 10 most-viewed beauty videos in 2015, it is difficult to gauge the number of subscribers for each channel during the time the videos gained popularity. Currently, the smallest channel (Farida “itsthefa” Lam) on the top 10 list has about 31,000 subscribers, while the largest channel (Michelle Phan) has 8.9 million subscribers. As I have alluded to in the introduction, the total views of these 10 most-viewed videos far exceeded the number of subscribers for these channels, which suggests that many of the viewers may not be subscribers; they could be watching the videos based on their interest in achieving those looks instead of their attachment to or support for the channels or their content creators. This implies that the quality of the videos or the interest viewers have for the videos could play a bigger role in gaining popularity than the “subscriber community” aspect of YouTube. In other words, it is possible for a video from a small channel or following, such as Lam’s “Anime Eyes with MAC” to gain immense popularity; currently, her video has more than 21 million total views—over 700 times more than her total number of subscribers.

Truthfulness and Accuracy

As technical communicators, we are obliged to be honest: The Society of Technical Communication includes “honesty” as one of our ethical principles and defines “honesty” as providing “truthful and accurate communications” (“Ethical Principles”). This emphasis on truthfulness and accuracy can be easily found in our literature. For example, I pointed out earlier that Swarts (2012) considered cognitive design, which is concerned with “accuracy, completeness, and pertinence” (p. 198), as one of the criteria in creating good instructional videos. In Todd’s (2014) discussion of lawsuits and litigations for product instructions and warnings, he urged technical communicators to ensure that “all facts in instruction manuals or on product warnings are accurately stated” (p. 416). Technical communication textbooks such as the *Handbook of Technical Writing* recommends having “manuals reviewed by your peers as well as by technical experts and other specialists to ensure that the manuals are helpful, accurate, and appropriate” (Alfred, Brusaw, & Oliu, 2015, p. 334). Similarly, in *Technical Communication*, Markel (2015) advised his readers to “revise, edit, and proofread all documents you write to make sure they are honest, clear, accurate, comprehensive, accessible, concise,

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professional in appearance, and correct” (p. 413), where he included three words (“honest,” “accurate,” and “correct”) on that list to highlight the importance of truthfulness and accuracy.

If accuracy is defined as “freedom from mistake or errors,” (“Accuracy”), then it would be difficult to determine the “accuracy” of makeup and hair tutorials. For example, there are no strict rules concerning the order in which one must apply makeup: One can choose to put on eyeshadows first or foundation first to achieve the same makeup look. Furthermore, the viewers of these YouTube beauty tutorials will likely have different face shapes, different skin tones or conditions, and different hair textures than the creators. Even if the viewers follow the exact instructions, the final look they create based on the tutorials may not be identical to the creators’, but this would not negate the accuracy of these tutorials.

However, in terms of truthfulness, care in execution should be highlighted when creating beauty videos that involve chemicals and hair tools. Cosmetic products containing ingredients such as fragrances and preservatives could cause adverse reactions, as there are increasing cases of allergic reactions to cosmetics (Alani, Davis, & Yiannias, 2013). Therefore, creators who recommend using cosmetic products in their videos should at least point viewers to the list of ingredients and any potential risks that they are aware of. For example, in “Unzipped Zipper Face,” the creator recommended using latex glue to attach the zipper to the face, which is an effective method; however, she failed to address latex allergies, which is a common medical problem (Poley & Slater, 2000). Furthermore, creators who use hot tools, such as hair curling or straightening irons, should describe proper handling techniques in their videos, as hair care product-related injuries such as thermal burns are on the rise (Qazi, Gerson, Christopher, Kessler, & Ida, 2001; Wilson Jones, Wong, & Potokar, 2008).

To find examples of “disclaimer language,” we could look to exercise videos such as Jillian Michaels’, which often include a statement like this: “You should consult your physician or other health care professional before starting this or any other fitness program to determine if it is right for your needs” (“Disclaimer”). Having such language in instructional videos allows us to be proactive in communicating risks and demonstrates empathy and concerns for our users.

Compliance with Standards of the Americans with Disabilities Act (ADA) and the Convention on the Rights of Persons with Disabilities

Although Morain and Swarts (2012) listed “accessibility” as one of the physical design qualities of online tutorials, accessibility issues were defined as “how well the video helped viewers focus on the topic of instruction [or] what efforts were made through screencasting technique, voice-over, or postproduction editing to direct a viewer’s attention to the site of instructional action” (p. 9). As seen in Table 2, Swart’s (2012) 12 best practices do not explicitly address accessibility issues concerning requirements of the Americans with Disability Act or the international Convention on the Rights of Persons with Disabilities.

Thus, we could look to technical communication scholars such as Browning and Cagle (2017), Oswal and Meloncon (2014), and Youngblood (2012) for recommendations on making our Web content, such as online videos, (more) accessible to our students and to the public. Oswal and Meloncon (2014) encouraged instructors to “find out what offices on campus offer support to make courses accessible (e.g., does the campus have a resource that would help with adding caption or text transcripts for audio and video materials?)” (p. 286). For example, Texas Tech University’s Accessibility website offers best practices for instructional video use (“Accessible Instructional Video”). Youngblood (2012) suggested using screen reader tools and resources from WebAIM to introduce novice developers to accessibility issues. Although video captioning is important in creating access, Browning and Cagle (2017) argued that we should not treat accessibility “purely as a checklist of available modes of access”; instead, they recommended incorporating a “critical accessibility case study” into technical communication courses as a way of “complicating the question of design through contextualized discussions about access” (p. 453).

Summary

In brief, this analysis demonstrates that there could be additional factors that contributed to the popularity of these videos, such as personal narratives, humor, kairos, and addressivity. As Clark and Mayer (2008), quoted by Swarts (2012), have pointed out, online instruction is effective due to its “perceived humanity of the narrator” (p. 204). It is clear that these creators did not hesitate to

demonstrate their personality or humanity by including personal narratives and humor by making mistakes in their videos, and they seemed to be aware of the timing of their videos and their intended audience.

This study not only reminds us to (re)consider practical issues such as truthfulness, accuracy, and accessibility when creating online tutorials, but it also brings to the surface extra challenges for technical communicators when creating and posting instructional videos on a platform like YouTube. In addition to the “pluralization of expert knowledge,” where “anyone can be an expert” (Mackiewicz, 2010, p. 22), we are faced with questions such as: What is the cost of following best practices? How useful would the instructional video be if it followed all the best practices but did not gain many views? Or, what about popular videos like these beauty tutorials that do not necessarily follow all the best practices? On YouTube, where popularity affects content algorithms and what viewers get to find and watch, how do we create “good” instructional videos that will reach a wide audience? I hope the findings from this study will compel technical communication scholars and practitioners to further explore these questions.

Conclusion

Due to the increasing popularity of YouTube beauty videos, I analyzed the 10 most-viewed beauty tutorials to improve our understanding of this genre of online instructional videos. Although this is a small sample size of videos, and the analysis is not intended to be comprehensive, it does shed light on how amateurs such as “beauty gurus” create popular instructional videos. The results show that sometimes the creators follow the best practices, and other times they deviate from them. A video does not have to be perfect, or even “good,” to be popular and well-received.

The majority of the beauty content creators included an introduction, began their videos with a “promise” or a clear objective, incorporated verbal instruction, were strategically redundant, and used a combination of text annotations, audio, and/or still images to complement the video. However, a lack of confidence and quality in most of the videos suggest that the creators did not rehearse their scripts nor did they use the recording and editing tools effectively. It also seems that none of them reassures the viewers or

promotes their sense of self-efficacy. Furthermore, in terms of asserting their credibility, the majority of them did not make explicit assertions about their relevant role, product-specific experience, or familiarity with related and relevant products.

Although videos from large channels such as Michelle Phan’s could be the reason for their popularity, small channels’ productivity should not be overlooked as they are also capable of producing popular videos that achieve millions in total views. The study results suggest that there are additional factors that could improve the effectiveness and popularity of online tutorials. As rhetorically savvy technical communicators, we should be reminded that providing personal narratives and being authentic about our mistakes can engage viewers; being explicitly aware of our audience and paying attention to timing may be just as important as the content we are showing in instructional videos. Furthermore, we should consider truthfulness, accuracy, and accessibility issues when reaching the vast audience on YouTube.

In closing, it is worth emphasizing that this is an exploratory study on YouTube beauty videos; therefore, additional research, such as increasing the sample size to include more recent videos and interviewing the creators to gain their perspectives, could further improve our understanding of these instructional tutorials.

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“All Vietnamese Men Are Brothers”: Rhetorical Strategies and Community Engagement Practices Used to Support Victims of Agent Orange

By Rebecca Walton and Sarah Beth Hopton

Abstract

Purpose: This article reports communication strategies used by a Vietnamese nonprofit organization to cultivate community engagement. One purpose is to convey a particular, non-Western perspective which can be considered alongside existing literature to highlight similarities and differences in different contexts.

Method: A qualitative field study investigating the question, “What are some strategies and keys to communication that facilitate community engagement and stakeholder participation, especially related to issues of Agent Orange in Vietnamese contexts?” We interviewed 38 participants across eleven provinces in north and central Vietnam.

Results: The organization studied cultivates community engagement by:

- Conveying information through activities and experiences (experiencing information), powerful images (seeing information), and numbers (quantifying information)
- Using that information to promote community engagement by reducing stigma and drawing upon a sense of responsibility

Conclusion: The organization’s community engagement strategies are both similar to and different from those conveyed in existing research on community engagement practice. The purpose of community engagement prioritizes unity, not dissent—a major difference. But the organization is highly attuned to preserving human dignity a significant similarity. The organization intentionally hooks into cultural values to motivate community engagement using rhetorical strategies appropriate to the local context—a similar strategy—but those rhetorical strategies are rooted in different frameworks, requiring different sensibilities and tools than those typically used in Western contexts.

Keywords: community engagement, rhetoric, social action, Vietnam, international professional communication

Practitioner’s Takeaway:

- Community engagement practice alone may look deceptively similar across contexts. But to understand and conduct effective community engagement, practitioners must be attuned to local values, culture, and context. Those factors inform the rhetorical strategies underlying effective practice.
- Partnering with local organizations is key to understanding not just the “what” of community engagement (i.e., communicative practices) but also the “why” (i.e., the rhetorical strategies necessary for effective work).

Rhetorical Strategies and Community Engagement Practices

Introduction

Practitioners and scholars of technical and professional communication (TPC) widely recognize the importance of community engagement informed by locally appropriate strategies and contextually specific understandings (Dura, Singhal, & Elias, 2013; Scott, 2004; Grabill & Simmons, 1998). Ideally, research regarding these strategies and understandings would inform the practice of community engagement. After all, as Hughes and Hayhoe (2008) assert, a key purpose of TPC research is to inform a “recognized and reliable consensus among the practitioners of that profession” regarding best practices (p. 3). However, the majority of our community engagement scholarship is focused on U.S. organizations working in U.S. communities using classical rhetorical frameworks to motivate engagement. When applied beyond American communities, such focus can make it difficult to judge the accuracy or generalizability of our findings. To expand the body of TPC scholarship in community engagement, then, we need more research investigating community engagement in contexts underrepresented in existing literature—especially research informed by local organizations that have long facilitated community engagement through local rhetorics. This research can serve at least two important purposes. The first purpose is to shine a light on previously unrecognized expertise, such as the community engagement expertise of non-Western organizations, and in so doing, to explicitly acknowledge the legitimacy of that expertise. This purpose reinforces and supports the recent social justice turn in our field as well as our longstanding body of work in social action (Rude, 2009). The second purpose is to fill gaps in scholarship on community engagement and rhetorical practice by conveying particular, localized, non-Western perspectives. Such perspectives can be considered alongside existing literature to highlight similarities and differences in community engagement strategies that are appropriate in significantly different cultural contexts. This comparison is useful for gauging the generalizability of community engagement practice and comparative rhetorical research across contexts to inform more effective social action. Toward these purposes, this article reports a subset of findings from a qualitative study of the community engagement strategies of the Vietnam Association of Victims of Agent Orange (VAVA).

Background

The Vietnam Association for Victims of Agent Orange (VAVA)

The Vietnamese government offers a small stipend to veterans who were affected by exposure to Agent Orange (AO), the nickname for a dioxin-based herbicide sprayed over millions of acres in Vietnam between 1961 and 1972 as part of a US-led crop destruction campaign. Though limited remuneration is offered to qualified victims—specifically, those who fought in the war and claim exposure-related illnesses—the Vietnamese government cannot financially support what it has identified as second and third generations of AO victims. To meet the needs of a growing number of victims, the Vietnamese government decided to socialize aid to victims and families, calling upon the people of Vietnam to contribute to a victim’s fund. VAVA is the nonprofit, humanitarian organization founded in 2003 charged with engaging multiple national and foreign publics to endow this fund. Though VAVA engages foreign publics, its primary fundraising opportunities lie among the national public. As the official Vietnamese Agent Orange victims’ advocate, VAVA holds a position of authority and respect among those familiar with the organization and its mission, but government sanction alone, while important in Vietnamese culture, is not enough to motivate national publics to engage this issue. VAVA must use a strategic, concerted, and uniquely Vietnamese combination of community engagement tactics and rhetorical frameworks, leveraging certain cultural, literary, and historical norms and symbols—some of which conform to classical rhetoric and some of which diverge—to motivate Vietnamese society to support its goals and mission. That mission, as described on VAVA’s website, is to facilitate self-support, mutual support, and community support among dioxin victims and their families.

In the following sections, we present a brief history of Agent Orange (AO). We then review TPC scholarship on community engagement and follow that with an exploration of new methodologies in comparative rhetoric and some of the points at which Vietnamese rhetorical traditions diverge from classical traditions. These sections provide the requisite context to begin to understand and interpret our findings regarding community engagement and rhetorical practice that

follow. Next, we describe our research methods and present two major findings on VAVA's community engagement practices among one audience: members of the Vietnamese public who are not directly affected by Agent Orange. We conclude with implications of these findings for TPC practice and scholarship on community engagement and comparative rhetorics.

Agent Orange History and Context

On the heels of the second World War, the American federal government was particularly interested in how science could improve wartime outcomes (Bush, 1945). Billions in public dollars were spent on research and technology (The Administration, 1945), some of which went to biologists who found particularly promising areas of focus in the study and manipulation of plant hormones (Kaempffert, 1948). A decade later, this plant hormone research was militarized in an experimental program used during the Vietnam War, a proxy war that took place in Vietnam, Laos, and Cambodia between December 1956 and the fall of Saigon on April 30, 1975 (Karnow, 1997).¹ In 1961, experiments at the joint American-South Vietnamese Combat Development Test Center generated a request to the U.S. Department of State to use a special set of herbicides for a program conceived to destroy enemy crops and food sources, and thereby demoralize the Việt Công and North Vietnamese Army. In November 1962, the first sortie of planes retrofitted to spray a super-concentrated mixture of 2,4,-D and 2,4,5-T—later nicknamed “Agent Orange”—flew low, above the triple-thick jungle of South Vietnam. The most famous missions defoliated some 4.7 million acres of Vietnamese jungle and destroyed nearly one-half million acres of crops (Lewy, 1978, p. 258).²

Though the evidence on human health consequences is mixed, the United States government compensates U.S. veterans of this war for multiple exposure-related

illnesses (Veterans, 2016), and credible evidence on the health effects of dioxin exposure suggest serious health consequences, but even this evidence is controversial and contested.³ After several trials⁴ and Congressional hearings⁵, the international humanitarian community became involved in the fight over environmental remediation and victim remuneration⁶, and significant diplomatic⁷ and scientific efforts⁸ have aimed to lay to rest this hungry ghost of war. Uncertainty, anecdotal evidence, inadequate technical knowledge, and conflicting scientific practice converge to make Agent Orange one of the most politically, scientifically, and rhetorically embattled issues in modern history.

3 For example, see the current language on the U.S. Department of Veterans Affairs website regarding Agent Orange exposure: <http://www.publichealth.va.gov/exposures/agentorange/index.asp>

4 For a fairly thorough explication of the court records and final settlement amounts, see Peter Sill's *Toxic War: The Story of Agent Orange*. The strength of the book is his access to trial documents, transcripts, and files, many of which have been lost to history and never digitized or archived. However, his selected bibliography includes only 24 works, with the most recent works published in 1993 before much of the recent and best scholarship on Agent Orange was written. For a complete decision, see Judge Jack B. Weinstein, U.S. District Court, Eastern District of New York, In re “Agent Orange Product Liability Litigation,” March 10, 2005, available at http://ffrd.org/AO/10_03_05_agentorange.pdf

5 In the 1960s, Congress was certainly aware of Agent Orange, but the public controversy about AO exposure had not yet begun, and so most texts about AO were technical memorandums like that composed by Richard A. Hensen in August of 1965, describing the “Physical Properties of Normal Butyl Esters of 2,4-D and 2,4,5-T and Orange.” There were also science and policy Legislative Assessment Reports. Such reports were delivered to the Subcommittee on Science, Research, and Development of the Committee on Science and Astronautics in the U.S. House of Representatives, 91st Congress, 1969. In later decades, the Congressional corpus changed substantially and included reports to the Comptroller General on the costs of covering negative health effects related to Agent Orange. By the 1980s, and at the height of the scientific controversy, the Congressional corpus included special reports specific to Agent Orange delivered to the Committee on Veterans Affairs, hearings, and the specific testimony of Admiral Zumwalt, an important character in the narrative of Agent Orange, as both he and his son, who were high-ranking officials in the U.S. military, died of exposure-related disease. There are also health and science briefings by Dr. Alvin Young. By the 1990s and 2000s, most of the texts reflected testimony gathered in hearings that resulted in bills and appropriation reports.

6 The Ford Foundation and The Aspen Institute are two nonprofit organizations that have tirelessly advocated on issues related to Agent Orange. For more information, see <https://www.aspeninstitute.org/programs/agent-orange-in-vietnam-program/>

7 See <http://www.washingtontimes.com/news/2015/jun/18/apnewsbreak-us-to-pay-millions-for-agent-orange-cl/>

8 There are hundreds of studies looking at various effects of dioxin on human and animal health. The best meta-analysis of these studies on human health was conducted by Anh Duc Ngo and colleagues: “Association between Agent Orange and birth defects: Systematic review and meta-analysis” (2006).

1 Though a gross oversimplification, America's entry into Vietnam was the result of a series of complex ideological impulses and political miscalculations. Even an abridged history or justification for the U.S. entry into the Vietnam War is beyond the scope of this article, but great works of scholarship by Stanley Karnow (*Vietnam: A History*) and Phillip Caputo (*A Rumor of War*) explore these issues.

2 Like much of the scientific and military discourse on Agent Orange, sources vary and often conflict regarding the exact quantities of defoliant sprayed, the areas sprayed, and the duration soldiers were likely exposed. That said, Lewy based his figures on the Military Assistance Command, Vietnam (MACV) history, which is one of the better sources available.

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We saw a kairotic moment for this research study created by recent environmental remediation efforts and the disparate understandings of community engagement apparent in those efforts. In 2014, at the request of the Government of Vietnam, the United States government agreed to remediate the still-contaminated environment around the Danang Airport, where the bulk of Agent Orange was stored during the war. Agencies involved in the remediation project included the government of Vietnam, USAID, and many other groups. Though the involved agencies agreed the project required stakeholder engagement, engaging the Vietnamese public and surrounding community members proved incredibly difficult. According to USAID, some 55 meetings, site visits, and workshops were held by the U.S. and Vietnamese governments alone, but few, if any, included public input by community members or AO victims (USAID, 2016). Both formal (e.g., governmental) and informal (e.g., cultural) mechanisms differ significantly between Vietnam and the United States, differences with implications not only for the study of rhetorical practices that facilitate community engagement, but even for defining Vietnamese rhetoric and describing its place and importance in community engagement. As field researchers, we found this site of study fascinating, if also overwhelming. Though many in the West know about the complicated legacy of Agent Orange, we offer this crude and too-brief history because of its importance to the rhetorical performances and community engagement practices we observed. Such historical context helps to explain our findings.

Literature Review

Community Engagement in TPC Scholarship

The relevance of community engagement to TPC is well established (Jones, Moore, & Walton, 2016). Community engagement offers complex sites of TPC involving wide-ranging stakeholders (e.g., community members directly affected by the issue at hand, indirectly affected publics, government bodies, nonprofit organizations, for-profit businesses) with varied and potentially conflicting interests, as well as the bread and butter of our field: technical and scientific information, rhetorical strategies, and professional communication genres. Indeed, as researchers have explored how TPC facilitates (and fails to facilitate) community engagement, some have argued

that technical communicators have a responsibility to engage in matters of public concern (Bowdon, 2004; Simmons, 2010). This appeal to communal responsibility resonated with us as we investigated VAVA's community engagement strategies, because we saw the organization engage in similar persuasive arguments (i.e., appeals to civic responsibility) directed toward Vietnamese publics (discussed in the Findings section).

Much community engagement scholarship in TPC overlaps with environmental communication, public health, and risk communication (e.g., Ding & Pitts, 2013; Frost, 2013; Waddell, 1996)—ideally bridging the scientific with the personal and challenging notions that science is arhetorical. After all, as many scholars have attested (e.g., Miller, 1979; Ornatowski & Bekins, 2004), science is not neutral, natural, or arhetorical but particular to context: “The very activity of science, as well as the resulting documentation, reflects specific sociopolitical contexts” (Ornatowski & Bekins, 2004, p. 263). In light of this specificity, Grabill and Simmons (1998) argued that for risk communication to be ethical, it must be informed by locally appropriate, nuanced understandings of communities and their own perceptions of relevant risks and concerns. Unpacking what is “local” and “appropriate” is difficult on its face but becomes more so at cross-cultural sites of study where researchers are disadvantaged by barriers of language, culture, and time. However, recognizing risk as socially constructed allows for a broader selection of stakeholders to intervene through community engagement, because knowledge is constructed through interaction: “Rather than a linear flow of technical information from the risk assessors to the public, risk communication becomes a web, a network, an interactive process of exchanging information, opinions, and values among all involved parties” (Grabill & Simmons, 1998, p. 425). Workplace studies of practice at the juncture of community engagement and humanitarian communication make similar points, emphasizing the importance of local community values and priorities driving the agenda of community engagement (Mays, Walton, Haselkorn, & Lemos, 2014) and of communication strategies that attend to human dignity and show respect for local ways of operating (Walton, Mays, & Haselkorn, 2016).

This emphasis on locally appropriate strategies and contextual understanding underscores that many factors—the political, cultural, historical, social, and linguistic, for example—influence the effectiveness

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of community engagement practices. Thus, our field needs to study community engagement and rhetorical practices in the local contexts in which they're practiced. Otherwise, we risk mischaracterizing communication strategies, rhetorical moves, and underlying values that are appropriate to and informed by particular contexts as universal (see Thatcher, 2012, pp. 10–19). Unfortunately, the vast majority of the community engagement research in our field focuses on community engagement practices in U.S. environments using classical rhetorical frameworks. Notable exceptions include Ding's excellent body of work on risk communication, which overlaps with community engagement (2009, 2013). Establishing exigence for her transcultural theory, Ding pointed out that foundational scholarship on risk communication, scholarship that calls for community engagement to inform public policies and actions, is predominantly informed by Western theories (2013, p. 127).

Indeed, the centrality of Western ideals, forms of governance, and rhetorical conventions is clear in some of the most influential TPC scholarship on community engagement. For example, Ornatowski and Bekins (2004) describe early TPC scholarship on community engagement as efforts to connect our field "to broader *democratic* and human concerns in order to open up the field to civic advocacy and action and make it responsive to *progressive political agendas*" (p. 252, emphasis ours). As they (2004) note, the notion of "community" is complicated by the complexities of rhetorical situations in which technical communicators may promote community engagement: international and cross-cultural organizations (What are the relevant legal, political, and cultural considerations, and how should one navigate them?), communication environments with competing stakeholder interests (Which "community" is served, to what degree, and at cost to whom?), and even the construction of communities by professional communication strategies (How do communicators create the communities they then defend, promote, and engage?). In light of these complexities, it is essential that community engagement research seeking to inform practice first critically interrogate notions of rhetoric, persuasion, and values specific to each research context.

Vietnamese Rhetoric

The field of comparative rhetoric tells us that rhetorical practice is influenced by culture and that contrastive rhetorical frameworks and sensibilities typically

develop across long periods of time, often resisting conceptualization and codification in texts. When we began this research project, we asked Vietnamese scholars if there was an equivalent text to Aristotle's *On Rhetoric*, in example; there is not. Instead, rhetorical frameworks and practices outside the Western tradition are more often embedded in texts that do not treat rhetoric as an explicit topic. To begin to understand the Vietnamese rhetorical tradition, then, and how rhetoric is used to engage the Vietnamese public around issues of Agent Orange, we would need to study literary and historical texts, texts on ethics, epistemology and statecraft (Lu & Benson, 1998, p. 3), legend, religion, political biography, and even cosmology. The closest text we could find that codified rhetorical practice based on epistemology, statecraft, cosmology and politics was the Confucian *Analects*.

Vietnam was ruled by foreign powers for over 1,000 years, and China ruled for most of those 1,000 years. Thus, the influence of Confucian thought on contemporary Vietnamese rhetoric is significant.⁹ Confucian rhetoric differs from Western rhetorical tradition in many ways. For example, verbal eloquence, highly prized by the Sophists, was regarded with suspicion by classic Chinese thinkers and outright rejected by Confucian texts (Xu, 2004, p. 115). "Glib talk" was more likely to result in hatred than respect in Confucian China. "A true gentleman," says the *Analects*, the main text of Confucian wisdom, "should be slow in his words and prompt in his action" (*Analects*, Chapter 24).

Although Marxism would eventually replace Confucianism in both China and Vietnam, such Confucian rhetorical tenets remained influential on

9 "In the thousand years of its occupation by China, Confucianism, the ruling philosophy of China, undoubtedly had influence. As in China, an intellectual elite in Vietnam developed over time and, very generally, practiced principles of obedience and respect for one's elders, education, and authority, which created a structured and stable social hierarchy. Confucianism's influence in Vietnam is seen especially in Hanoi where, in 1070, the Van Mieu (Temple of Literature) was erected as a learning center dedicated to Confucius. Though its influence declined (as it did in China) from the 15th century forward, Confucianism's influences are still felt today and were influential in other cultural moments, including Ho Chi Minh's construction of his vision of governance, which prompted the expulsion of the French and precipitated the Vietnam War (Son, 2013). That said, Confucianism is difficult to define, explain or explore -- let alone Confucianism in Vietnam -- because it has become, as Liam C. Kelley noted in his 2006 article, "an invented signifier that bears a problematic relationship to the thing it signifies" (p. 1). To resist this, scholars are increasingly considering "repertoires of resources" (p. 1)—of which Confucianism is but one part. These repertoires of resources allow for individuals to marshal different ideas and practices at different times and in different circumstances while offering scholars an alternative to the essentialism inherent in all-encompassing ethos, rhetorical or cultural systems."

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textual construction and rhetorical practice. For example, when persuading, many Vietnamese rhetors will use inductive rather than deductive arguments. The goal of such discursive organization is to convince the reader of the validity and authenticity of the argument and to gently lead the audience to a natural conclusion. Overt tactical moves of persuasion are often considered excessively direct and forceful (Hinkle, 2002, p. 31). We saw such rhetorical theories put into practice on several occasions. Lunch, ceremonial welcomes, and tea-drinking were conducted before the day's arguments were made; evidence was collected by and given to victims and victim families before key requests (like registering for government assistance) were made of them; long histories of who fought where, when, and how were shared before the arguments about remuneration were made.

As Chinese rule gave way to colonial rule, the influence of Confucius gave way to other political, economic, and cultural paradigms—some Western, others Eastern—introduced by leaders like Hồ Chí Minh. Though born and raised in Vietnam and a diligent student of Confucianism, Hồ Chí Minh was also later educated in the West. The rhetoric he employed was a unique blend of Marxism, Confucianism, organizational tenets from the mandarin state (the French-employed ruling class of Vietnamese), and Western rhetorical frameworks, which Hồ blended to modify and update traditional Confucian concepts like that of the *superior man*.¹⁰ A result of this remixing was that the character of the rhetor became more important than the content of the discourse. We observed this tenet frequently. Introductions at each new site visit were long and elaborate and were accompanied by official communiques from VAVA headquarters and the government. Once we established our character—that

we were researchers from American universities sanctioned to study by VAVA and the Vietnamese government—the content of our IRB letter of protections, in example, was waved off as time-consuming and irrelevant (though we did review the letter information in detail anyway).

We noticed other Confucian tenets invoked during community engagement practices, too. For example, the concept of *shu*, sometimes explained as “self-reflection” but more easily understood in terms of “reciprocity,” was central to VAVA’s discursive strategy. Confucius advised, “What you do not wish for yourself, do not do to others” (Analects, Chapter 15). Rhetorically and socially, *shu* is a powerful dictum that ordered villages and regulated political and interpersonal action. It was explained to us using a sort of syllogistic logic that is, admittedly, difficult to reject:

You should not turn your back on a brother.

All Vietnamese men are brothers.

Therefore, you should not turn your back on a fellow Vietnamese.

We can see *shu* at work in Confucian rhetorical theory too, which contrasts significantly with many Aristotelian rhetorical concepts and frames. In the Confucian paradigm, the purpose of rhetoric is to benefit the audience; to support contentious claims through tradition and authority; to present arguments simply; to find the truth through thoughtful study of the natural world; to be sincere and conciliatory; and to avoid arguing over matters outside one’s expertise or responsibility (Oliver, 1971). By contrast, the classical model of rhetoric approaches persuasion directly and forcefully; it is agonistic by nature and usually does not aim to create harmony or social relationship. The aim is to win the argument. Thus, logic, proof, and justification are integral tools used in argumentation, and the rhetor’s ideas and goals supersede those of her audience. Much Western discourse then focuses on individual points of view, factual and scientific validation, logical linear arrangements, and a “proper” set of universal rules that, when used correctly, should lead the rhetor to victory. Though feminist and comparative rhetoric studies have complicated, questioned, and countered this view, this is still

10 The concept of the “superior man” was central to Confucian thought. The “superior man” could be superior to his fellow humans but strove to be superior to his past and present self. This superior man is not at all a super man of the Nietzschean type. He is merely a kind and gentle man of moral principles, at the same time a man who loves learning, who is calm himself and perfectly at ease and is constantly careful of his own conduct, believing that by example he has a great influence over society in general. See Lin Yutang, *The Wisdom of Confucius* (New York: The Modern Library, 1938), 23. The “superior man,” then, was not a person of perfection but a condition of being superior to or in those things that one could be superior. For example, purpose is an area where the “superior man” could demonstrate superiority. According to the *Analects* bk. xix., c. vii, “the superior man learns in order to attain the utmost of his principles.” For Confucius, the “superior man” was compelled through virtue to strive toward higher things.

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largely how canonical texts on rhetoric used in modern American classrooms present rhetorical practice in the modern agora (Bizzel & Herzberg, 1990). Comparatively, we found almost none of these constructs used in VAVA's persuasive efforts with Vietnamese constituencies.

This contrast brings us to a very important question to consider: Can we even call the communicative moves we observed VAVA making *rhetoric*? Specifically, can Walton and Hopton—as Euro-Americans who are hamstrung by our own terministic screens of culture, language, and classical training—make any claim of worth about the essence of a Vietnamese rhetoric? Further, and more interestingly, how do we acknowledge “the influence of one’s own cultural and ideological make-up on the study of the other” (Mao, 2013, p. 215) but still engage in ethical cross-cultural research? Mao’s groundbreaking 2013 special issue on comparative rhetorics provides concepts useful for us in particular and for TPC practitioners and scholars at large to unpack these questions.

The term *rhetoric* was developed by Plato, refined by Aristotle, and, as Schiappa (2003) argued, refers to a set of “specific theories and doctrines” (p. 312). For Schiappa, and many other scholars of rhetoric, there was no rhetoric before Plato and for other scholars, like Kennedy, all rhetoric after Plato, even that practiced in contrastive cultures, is merely an imitation (with local modifications, granted). Kennedy’s foundational argument in his classic *Comparative Rhetoric* (1997) was that rhetoric was a universal function of language and a global phenomenon worthy of systematic attention. He was, it seems, after the same universal “body” of persuasive devices and theories that Aristotle sought. Much of the interdisciplinary scholarship (but specifically that from comparative rhetorics) on which TPC scholars rely to frame their research gets stuck in the quicksand of what Schiappa (2003) first called “facts of essence” rather than “facts of usage” (p. 7). According to Mao (2013, p. 215), any attempt at defining something results in two types of questions: questions like “What is X?” and questions that ask “How X is used.” The first type of question is a “fact of essence” question; the second is a “fact of usage” question: “To genuinely embrace non-Euro-American rhetorical practices and their ways of knowing and speaking and to productively engage the cultural mappings that inform discursive fields, we must part ways with the perennial yet parochial longing for

facts of essence” (Mao, 2014, p. 450). For practitioners working in complex intercultural sites, the question then becomes not “What is rhetoric in Vietnam?” but “How does VAVA use persuasion, and to what end?”

What such a methodological shift affords TPC practitioners is the ability to stand at what Mao called the “rhetorical crossing” and to observe, reflect, and analyze (and thus contribute to our field) from behind our own terministic screens of culture, language, history, and training. When TPC practitioners ask, “What does VAVA do, and how does VAVA do it,” we move in a direction committed to “an ecology of historicity, specificity, and incongruity” (Schiappa, 2003, as qtd. in Mao, 2013, p. 216). Such a commitment can help practitioners counter the dominant means and models of discourse and the theoretical frameworks used to analyze them and may even encourage the development of new ways of “being, knowing, and speaking” (Mao, 2013, p. 216).

Methods

Walton and Hopton went to Vietnam in summer 2016 to conduct a qualitative field study investigating the following research question, “What are some strategies and keys to communication that facilitate community engagement and stakeholder participation, especially as related to issues of Agent Orange in Vietnamese contexts?” We partnered with the Vietnam Association for Victims of Agent Orange, a nonprofit, humanitarian organization which serves as the Vietnamese government-sanctioned nonprofit through which all aid to Agent Orange victims is mobilized, received, coordinated, and distributed. Vietnamese government approval was required for this research, and we are indebted to VAVA, who secured the requisite approvals with officials in each of the provinces we visited. We interviewed 38 participants across eleven provinces in two geographic areas: north Vietnam (locations accessible within a one-day drive from Hanoi) and central Vietnam (locations accessible within a two-day drive from Danang). VAVA headquarters identified these locations as offices in which representatives are known for strong community engagement work. Interviews addressed the following topics:

- What are some factors that make for good communication with communities (particularly three groups, which emerged as significant stakeholder designations during data collection and

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analysis: Vietnamese families directly affected by AO, Vietnamese publics not directly affected by AO, international audiences)?

- What are some strategies they employ in communicating to facilitate community engagement?
- What are some keys to successful community engagement?
- What are some barriers to successful community engagement?

To minimize potential for coercion, we hired a translator who is not associated with VAVA, and we emphasized to potential participants that all quotes would be anonymized and that their decisions regarding whether to participate would be confidential. The same interpreter, Nguyen Thuy Linh, who is a native of Hanoi, facilitated every multi-lingual interview. Onsite in Vietnam, interview notes were fleshed out in collaboration with the interpreter, who informed early analysis by culturally contextualizing the data. In the Findings section, we illustrate themes with “quotes,” which are as close as possible to participants’ words. But we acknowledge that quotes translated across languages cannot directly, exactly convey a participant’s utterances due in part to differences in language and culture, and due in part to the multiple humans who contribute to the process of meaning making (Gonzales & Zantjer, 2015).

Findings were identified through iterative formal coding of interview notes and transcripts to identify patterns of meaning. Walton and Hopton individually and inductively identified patterns in the data and then jointly developed a list of major themes. This article reports on one of those themes: community engagement of Vietnamese publics who are not directly affected by AO. To increase the credibility (Guba, 1981) of our findings, we shared a draft of this article with VAVA leadership, inviting their feedback.

Findings

The following findings emerged in reference to cultivating community engagement around Agent Orange, among members of the Vietnamese public who are not directly affected by it:

- Finding 1: This audience encounters information in the following ways:
 - Experiencing: VAVA conveys information through activities and experiences.

- Seeing: VAVA conveys information in powerful visual images.
- Quantifying: VAVA conveys information through numbers.
- Finding 2: VAVA uses that information to promote community engagement through the following strategies:
 - Reducing stigma: VAVA heads off potential objections to helping AO victims.
 - Drawing upon a sense of responsibility: VAVA cultivates public commitment to help vulnerable community members and veterans.

Finding 1: How Audiences Encounter Information

Experiencing

A major goal of VAVA’s publicity is to make the ongoing research, remediation, and relief efforts related to Agent Orange important to Vietnamese publics. To prioritize patronage, the organization coordinates several opportunities to experience or interact with VAVA, victims and their families, and ranking government officials, often centered on key anniversaries and ceremonies like the 55th anniversary of the spray campaign, Vietnamese Veteran’s Days, or the Lunar New Year. Ceremonies play an important role in Vietnamese cultural life and traditionally are times of giving and honoring the past, thus offering kairotic moments for VAVA’s community engagement work (see Figure 1).



Figure 1. This VAVA publication recognizes several associations and groups that visited and gave gifts to dioxin victims on the occasion of the Lunar New Year.

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Other important ceremonies include “rewarding summits” wherein VAVA rewards victims who have overcome their limitations through entrepreneurship. Highlighting and promoting these “shining examples” (detailed below) is a critical component of VAVA’s persuasive strategy. This strategy shifts the narrative from being a victim to being a contributing member of society worthy of education, investment, and opportunities for happiness as defined by Vietnamese culture. In the quotes below, participants described why VAVA sees experience as such an important part of its communication with unaffected publics:

There is an emphasis on public relations to help the larger community see victims as part of the community and thus worthy of help.

The activities of the district are well recognized by the community members, and often they are moved.

The difficulty is that the society doesn’t fully understand. The news about dioxin is still very new to certain parts of society. Society is affected by many sources of information, but they understand [best] through real activities.

Another experience-focused component of VAVA’s community engagement strategy is home-building and self-sufficiency campaigns. A house is a powerful rhetorical symbol in Vietnamese culture. Representing more than status, it is also where ancestors are worshipped, and, thus, having a house is an important icon that can mark belonging both in current time and the hereafter. One VAVA participant relayed the story of a man and two grandchildren badly affected by Agent Orange exposure. They were very poor and lived in a house that was so badly decaying it flooded with every heavy rain, threatening the man’s and his grandchildren’s lives. VAVA and the government intervened, negotiating a land deal and raising enough money from the village to build a new two-story house that didn’t flood. The community participated in the construction of the house, working shoulder to shoulder to support their “brother”:

Under the recognition and witness of his relations and neighbors, he finally got to be in a house.

Integrating both young and old into such activities is especially important to VAVA’s future success, as the current generation, now some 40 years removed from the American war, will be the support network for the second and third generations affected by dioxin exposure. An example of experience involving children, and marking VAVA’s sense of its shifting patron base, is a fundraiser executed across several school districts where children donate their breakfast money to support victims of Agent Orange:

We encourage collaborations between the seniors and the young. The young and the old people both working together. In the North, there are not so many young people, but this job needs the activeness of the young. Here in [location redacted], the older people plan the strategies and the younger people do them.

Seeing

Such experiences are important to VAVA’s mission in another way: Experiences provide the narrative and visual information needed to make Vietnamese publics see the extent of human suffering caused by dioxin (see Figure 2).



Figure 2. In a VAVA brochure marking the 55th anniversary of the Agent Orange spray campaign, the second panel is titled “Agent Orange Disaster: The Pain Continues,” with the rest of the second panel and all of the third filled with pictures of Agent Orange victims.

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Participants described why these stories and images are featured in the print and digital promotional pieces distributed across various media channels and sent to businesses to solicit financial support:

When the society and communities understand about the general consequences and the general conditions and status [of victims], then they are compelled to help.

Not so many people understand the victims. For those who don't really understand, we will first explain what an Agent Orange victim is [and how the victim is] directly or indirectly affected, and then we tell them about the level of suffering. We show the magazine coverage or the news. Based on the Agent Orange victim's condition, we will invite them to see them directly with their own eyes. We may invite several times, and we may explain several times before they are compelled to care.

Businesses in larger urban areas might prove cautious of such promotional materials, making the power of visual documentation more necessary:

We also take a picture and show them the terrible condition of the house. In some cases, even though they receive the request, the business will send people to double check the request for donation. The corporations do this because they want to help the right people.

But photographing victims and families serves an even larger rhetorical purpose: not just as emotional appeal but as literal proof. Photographs, which were carefully stapled to wallboards inside every VAVA office visited, were silent witnesses to the true experiences of Agent Orange victims:

We post the images...because it is the reality. It is the facts—actual evidence of their victimization.... Without the photos, then the victim's victimization is not a reality. Taking photos is a necessity. The pictures may be disturbing, but it is a necessary disturbance to show as evidence. These people were supposed to have the right to pursue happiness as stated in our Constitution, but dioxin took this right from them. So, we must show the photos so society will understand.

It is required by international and local researchers to have evidence, to have witness, to have a real case. If [we] speak only, they cannot understand. That's why we need to have evidence, proof to show them, so they will listen, so they have a chance to see the pictures, the evidence, and the person, a real victim. So they can listen, but they can also see with their own eyes. That is how they can be persuaded.

Quantifying

Those engaging in the fight for justice for Agent Orange victims are frequently on the defensive. It has traditionally been the victim's responsibility to prove exposure-related problems when seeking support. This has proven true globally, not just in Vietnam. Therefore, building the case for Agent Orange victimization—and thereby generating support for victims globally and nationally—requires VAVA to aggressively document the truth of its claims both visually and numerically. The number of victims suffering dioxin-exposure-related illness and disease is highly contested, but the Vietnamese government has determined the number to be in the millions. In response to claims the Vietnamese government inflated these numbers to guilt the United States into paying reparations, VAVA determined to prove their official counts by keeping meticulous records of victims, symptoms, relationship to the veteran first exposed, location of veterans' service, and level of assistance received or needed.

The records are kept on large whiteboards that cover entire walls of VAVA offices and are used as much to prioritize need and document support as they are to persuade those who gaze upon the boards that Agent Orange is still a very real and present danger. Whether donors or the public see these boards or respond to their persuasive weight is unknown, but several VAVA volunteers could recite the statistics from the boards from memory, demonstrating the importance of the narrative of numbers and the rhetorical weight of quantification:

So, in the city, there are more than 150,000 citizens [and] more than 2,300 exposures. Based on these numbers there is 1.5% of the population suffers exposure. Within these numbers, there are 57 families that have more than 2-4 victims within the family unit. Within these 57 families, there are 124 victims total. In twenty-eight families, both

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husband and wife are victims. Twenty-nine had two generations of victims. There are three families that have three generations of victims. This shows the extent of the effects of dioxin.

These numbers don't just live on the walls at VAVA offices. They also go into the professionally designed and produced flyers and reports that are used by intergovernmental agencies to stay on message as they support VAVA by extending its reach into communities, particularly at the village level where the need is greatest but access is hardest:

Because there are many levels of the society, we work with the other communication departments. We exchange information and then the communicators from that department go into the villages and communicate that information. Sometimes their only focus is Agent Orange.

We use forums and events and meetings with government offices at the appropriate level because they work with the society. We always call for help so people can hold hands together for the victims.

Finding 2: Key Strategies

If experiencing, seeing, and quantifying are the ways that audiences encounter information about AO, the question follows, "What key strategies does that information support?" To cultivate community engagement among Vietnamese publics whose families are not directly affected by AO, VAVA employs two key community engagement strategies. First, the organization aims to reduce stigma associated with disability by heading off two potential objections: 1) that families must have brought these troubles upon themselves, and 2) that people with disabilities do not contribute to society. Second, VAVA aims to strengthen among members of the public a shared sense of civic responsibility to care for 1) vulnerable society members, and 2) veterans.

Reducing stigma

One important communication strategy for cultivating community engagement is to reduce the stigma associated with disabilities. Participants explained if society believes that children are born with disabilities due to karma, then those children's families may be shunned or looked down upon:

There is stigma. People's children are affected, and they hide it from society. Some people even lock up their children. They don't understand; they don't know why, so they just think it's karma: this is karma; your family did something bad in the past. And that creates fear. When VAVA comes, VAVA tells them this is consequences of the war; you have nothing to be afraid of.

This message regarding dioxin exposure as the cause of AO-related disabilities is aimed not only at affected families themselves but also at the general public to head off potential victim blaming (see Figure 3):

In Vietnam the spiritual issues are crucial. [...] They believed it was karmic: the grandparents must have done something bad for the children to receive it.



Figure 3. This brochure from the Hai Phong chapter of VAVA marks the 55th anniversary of the Agent Orange spray campaign. The first interior panel (right) is titled "Functions and Duties of the Association." It begins by explaining not only the purpose of the organization but the scientific cause of AO-related disabilities: "The association is a social organization typical of dioxin victims who are living and working in Hai Phong, and individuals and groups voluntarily contribute their labor, intelligence, money to help victims of Agent Orange overcome the *consequences of toxic chemicals used by the US during the war in Vietnam*" (emphasis ours). It also includes a picture of an Agent Orange victim captioned with his full name, birth year, and location.

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After the communication, they have changed their minds. [VAVA] educated them that it's dioxin, not karma.

Since VAVA was first established, we push more PR activities so society knows this is the consequences of the war, and there is less stigma.

A second approach to reducing stigma is using “shining examples” to create a widely embraced narrative among the Vietnamese public, a historically successful strategy in Vietnam. To promote a national identity of fierce independence immediately after French colonial rule, Hồ Chí Minh rallied writers, composers, and artists to draw upon Vietnam's past for heroes and folk legends to promote as “shining examples of sacrifice, pluck, or steadfastness” (Decaro, 2003, p. 125). Similarly, VAVA mines local communities for shining examples of people with disabilities who have strong, positive spirits and who are making efforts to “overcome their difficulties” by being contributing members of society:

We have a sample of victims who are productive and have overcome their difficulties. We also have prizes and awards for the victims that have a good spirit. This is the signal and way to show society that victims are not victimized but are proactively trying to overcome their troubles.

We get support for chickens, ducks, cows, calves, and motorbikes or bikes. All this is to enable them to overcome their difficulties by themselves. We cannot only give them the fish all the time; we have to give them the fishing pot, too.

VAVA highlights these examples in publications, media events, and public occasions:

On specific occasions reporters from the media will come to report, and it's usually during this time that we put forward the bright examples.

To generate support (in the sense of financial donations as well as communal spirit) from the broader Vietnamese public, VAVA frequently highlights cases of families who are making efforts to “overcome their difficulties” and to “blend into society” (see Figure 4).

These efforts are central to VAVA's mission; in fact, one of two major purposes of the organization is collecting donations used to help AO victims blend into society:

The second function is to call for donations, help, and resources from society—both mentally and financially—to help victims overcome their difficulties and blend into society.



Figure 4. This VAVA publication highlights a veteran who serves as a shining example; the article is titled, “The Will to Escape Poverty,” with the subtitle specifying that he is a veteran.

The goal of helping victims to “blend into society” was very prominent in participant descriptions of community engagement. In this framing, we see the goal of restoring harmony: community engagement for the purpose of restoring vulnerable and disadvantaged people to an accepted and respected place within the fabric of society. Emphasizing the belonging of AO victims is a rhetorical strategy rooted in communal values like *shu*. Thus, publicizing how well people with disabilities are blending into society helps to reduce stigma, which benefits AO victims and also strengthens the message that the broader public, then, has a responsibility to provide the financial support and social acceptance that facilitates people with disabilities in contributing to society.

Promoting a sense of responsibility

A second key message that VAVA uses to encourage community engagement among Vietnamese publics not directly affected by AO is that all members of society

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have a sense of responsibility to vulnerable Vietnamese in general and to veterans in particular. The belief underlying messages of communal responsibility is clear in the following quote:

One hundred percent of all the children here are in dire poverty, and many come from families with two or three victims. As the human, it is our responsibility and our will to help them reduce their burdens and their suffering. It is not just the individual's responsibility, but it is the collective society's responsibility to care for these who suffer.

VAVA is acutely aware of threats to AO victims' human dignity, threats such as having to continually beg for financial assistance:

There is a phrase – *di an xin* – which means to “go and beg,” and this is a joke among the community of victims that they have been forced to ask penny by penny for support from *dioxin*, which is pronounced the very same as *di an xin*.

To relieve this humiliation, VAVA members aim to stir empathy among Vietnamese publics, not just to motivate an individual response but rather to restore harmony, to call everyone to get involved together as part of a distributed and varied but communal effort:

It is true to say it is pity, but it comes from the heart of the human; pity is a human feeling. We want to provoke pity, but from the pity they may become better motivated to help them [AO victims and families].

In the Vietnamese regulations and policies, there are always events to call all people, organizations and associations across society's multiple levels so together, united, they are helping the victims of Agent Orange.

One key to involving “all people” and “all organizations” is conveying that many forms of help are welcome, and all efforts are beneficial. Businesses are asked for financial donations; people who cannot afford to give money are encouraged to donate labor; even children can donate from their school meals:

We also cull resources from many sources. We even cull from kindergarten level. They [the children] will donate one breakfast or partial breakfast to the victims.

They may be very old without a salary, but they try their best to help. For example, when we make a call for help, those who even don't have money can come and labor.

Every level – old to very young – contributes to the care of victims.

We see in these messages a connection to the Confucian concept of *shu* and its application in caring for one's brothers: i.e., Vietnamese people being responsible for assisting any member of society in the ways and to the extent that they are able. This concept was invoked not only regarding responsibility to vulnerable society members in general but also to veterans specifically:

A very bad leaf that's in a bad condition can cover a worse leaf—or help someone in an even worse condition. The second proverb is to “love others as you love yourself.” So, VAVA representatives, who are also victims, they volunteer, donate, sacrifice their youth to the war and are unlucky in getting exposed to Agent Orange. Therefore, the Vietnamese government and people never forget their contribution. Therefore, they will care for and love them.

We have to be clear about the victims, who are veterans, who devoted their lives to the peace of this country. They are suffering. Therefore, the next, recent, younger generations must have the responsibilities toward taking care of the older generations. The communication method must express that the veterans have devoted their lives to the country and therefore everyone must pay the debt of gratitude to the veterans.

Thus, we see that VAVA cultivates community engagement among publics who are not directly affected by AO using two key strategies: first, heading off potential victim blaming, and, second, invoking a sense of responsibility toward vulnerable people and veterans.

Rhetorical Strategies and Community Engagement Practices

Implications for Practitioners and Scholars

In reflecting upon the rhetorical messages and communication strategies VAVA employed, we are concerned that a Western outsider may (mis)interpret strategies and messages in light of Western perspectives. For example, the use of visuals to help the Vietnamese public to “see” the plight of AO victims and to motivate patronage may seem like solely an application of pathos: an emotion-based appeal intended to motivate individuals to care about and take action regarding AO out of pity for strangers who have been affected. However, there is a danger in interpreting VAVA’s community engagement without being attuned to locally appropriate rhetorical strategies: It can lead to inaccurate understanding that could occlude recognition of why VAVA’s work is so effective. In calling Vietnamese publics to “see” AO victims, VAVA is acknowledging victims as brothers and is calling for collective, communal responses: it is calling for everyone, even “bad leaves,” to cover a worse leaf. Further, it is privileging a kind of evidence that is “external to the subject” as Aristotle would have called it and countering classical wisdom that “it is wrong to warp the jury by leading them into anger or envy or pity” (1354a). Observing such moments of rhetorical contrast from behind our own terministic screens invites the Other to speak.

Similarly, consider VAVA’s strategy for heading off victim blaming: drawing attention to “bright examples” who are “overcoming their difficulties” by “blending into society.” This message should not be confused with an individualized independence, the ability to support oneself (i.e., pull yourself up by your own bootstraps). Rather, a key to this communication strategy is highlighting the efforts of AO victims to take their place within the fabric of society to contribute to society. VAVA’s message implies, “If AO victims are making efforts (in the face of challenges they did not bring upon themselves through karma, by the way), then how could unaffected Vietnamese community members refuse to do their part in helping to restore harmony to society?” Thus, in considering not only what messages VAVA communicates but also why it does so, we begin to understand the effectiveness of their community engagement without essentializing.

VAVA’s message is a call to restore harmony by helping AO victims to blend into society. This message draws upon *shu*, the responsibility to one’s brother to

help in any way you can. It is a rhetorical argument rooted in localized values, an argument that we believe requires an insider voice or at least insider expertise to be heard with credibility. Thus, one key implication for practitioners working across cultures is to investigate why local community engagement strategies are successful rather than merely observing successful insider practices and emulating them. In this case, it is the context of the message, which relies on a complex Confucian lineage rather than the content of the message, that matters and compels Vietnamese audiences to engage and act. In other words, it is necessary for TPC practitioners who are cultural outsiders to learn about the values, attitudes, beliefs, and intentions underlying successful local practices and to study those values, attitudes, beliefs, and intentions in usage rather than in theory. Further, any generalizability of best practices should fall under the guidance and authority of cultural insiders. Practitioners must remember that “historicity, specificity, and incongruity are always becoming” (Mao, 2014, p. 450). Therefore, we must be careful about generalizing whether guided by local practice or not, because the “political dynamics of cultural conversations at specific historical moments and power-and-knowledge relations in the rhetorical rethinking of the human sciences are never fixed or stable and they are always being realized” (Mao, 2014, p. 451).

In investigating VAVA’s practices, we see an overt difference in the purpose of community engagement as compared to Western perspectives. In the US, community engagement historically aims to inform, protest against, or change public policies (Grabill & Simmons, 1998). That aim directly conflicts with the Confucian-inspired warning against speaking eloquently in opposition to official ideology (Xu, 2004). VAVA coordinated closely with government officials to maintain unity in ideals, priorities, and messages between the government and all branches and levels of VAVA. Thus, a major purpose of community engagement seemed to be calling all members of society to contribute to restoring harmony, a goal that prioritizes unity over dissent. This difference in the purpose of community engagement is an important one. When TPC practitioners prepare to facilitate community engagement across cultures, it is vital they investigate not only community engagement messages and the underlying rhetorical traditions those messages draw upon but also locally defined purpose(s) of community engagement.

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Among other practical implications, the locally defined purpose informs whose perspectives and priorities should direct community engagement activities. For example, how VAVA sees the purpose of community engagement—calling all members of society to fulfill their responsibilities for restoring harmony—informs how and to what degree the organization sought out local perspectives and views. TPC scholars have emphasized that ethical risk communication (Grabill & Simmons, 1998) and humanitarian communication (Walton et al., 2016) must be informed by communities' own concerns and priorities. As Ornatowski and Bekins (2004) might point out, this requirement raises the question of which communities' priorities should take precedence and who constitutes a community. In analyzing VAVA's interaction with unaffected Vietnamese publics, we did not see VAVA asking what issues those publics wanted to address. VAVA's mission is specific to generating community engagement around Agent Orange, a mission VAVA pursues with unaffected Vietnamese publics by hooking into values important to those publics, such as societal harmony. VAVA's interactions with AO victims and their families, however, did center on building relationships that would allow VAVA to understand families' particular circumstances and needs.

In addition to local perspectives and views, another priority common to community engagement communication is preserving human dignity (Walton et al., 2016), a priority shared by VAVA. VAVA seeks to preserve the dignity of AO victims while motivating unaffected publics to support victims and their families. Participants discussed the importance of showing powerful images of people with disabilities but only with the family's consent and for the purpose of drawing together both affected and unaffected publics to help victims blend into society. VAVA representatives explained that they do the work of generating support for victims and heading off potential objections in an effort to save victims themselves from the indignity of doing so: Victims should not have to "go and beg" (*di an xin*). To motivate community engagement, VAVA emphasizes the responsibility of unaffected publics to their veterans—capable heroes who sacrificed for the common good. The organization also draws attention to "bright examples" of victims who are making efforts to "overcome their difficulties." In both of these messages, we see attention to the dignity of AO victims, of

highlighting and respecting their contributions while calling upon unaffected publics to do their part as well. This nuanced communication strategy can be a useful example for practitioners seeking to balance messages of desperate need for involvement and contribution, on the one hand, with respect for the efforts and capacities of beneficiaries, on the other.

In summary, VAVA's community engagement strategies are both similar to and different from those conveyed in existing research on community engagement practice. The purpose of community engagement and the rhetorical moves used to highlight this purpose focus on unity, not dissent—a major difference. But the organization is highly attuned to preserving human dignity—a significant similarity. And VAVA intentionally hooks into cultural values to motivate community engagement using rhetorical strategies appropriate to the local context and audience—a similar strategy—but those rhetorical strategies are rooted in different frameworks and call for different sensibilities and tools than those typically used in Western contexts. In presenting these strategies, this research provides a vivid, specific picture of what community engagement looks like in a particular context around a particular issue, contributing one more facet to the body of community engagement scholarship which aims to inform TPC practice. This facet is an important contribution, we believe, because it shows what community engagement may look like when it does not aim to support democratic goals or to influence public policy.

A major implication of this research is the importance of partnering with local organizations that do the day-to-day work of community engagement. These partnerships are key to exploring questions regarding facts of usage rather than merely facts of essence. Exploring these questions requires us to pay attention to the political, economic, and cultural exigencies that influence local contexts and communicative performances. How do the divergences in observed social, political, and linguistic practices help us rethink our own? Engaging in this reflexive work can help us begin to "resist formulating structures of sameness and difference only based on facts of essence and move toward developing relations of interdependence based on lived, holistic experience" (Mao, 2013, p. 217). Thus, whether studying or practicing community engagement, technical communicators must work through local

Rhetorical Strategies and Community Engagement Practices

structures and existing organizations familiar with local concerns, priorities, and ways of knowing, and be open to the possibility that one's own view of what community engagement is or aims to accomplish may not be another's. We call for more partnership-driven international research, especially in the Global South where resources are scarce and local expertise understudied, to learn about community engagement from those engaged in this important work.

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Review of Four Books on Media Landscape

By Patrick Lufkin

Introduction

As technical communicators, we attempt to place accurate information before the public in forms they can use. But to do our jobs, it behooves us to understand the information climate in which we operate. That information climate is currently undergoing changes that are just as real, dangerous, and unpredictable as the changes that are happening in the physical environment.

In this issue, we look at books that cover the present information environment from a variety of perspectives.

Stealth Communications



Early in the last century, Edward Bernays, often called “the father of public relations,” bragged of the power “shrewd persons operating behind the scenes” had to “control the destinies of millions.”

Today these “shrewd persons” have become a multibillion dollar industry with global reach. Using an arsenal of manipulative “dark arts”—deceptive language, Astroturf groups, partisan studies, and, more recently, the exploitation of the Internet and social media—industry operatives influence public attitudes on everything from global warming, to public policy, to the outcome of elections, to who is considered friend or foe.

In *Stealth Communications*, Jansen argues that given its power, and despite numerous scandals, the PR industry has never gotten the scrutiny it deserves. In this fascinating, well researched book, she pulls back the curtain on the industry to reveal what can be known of its history, its methods, its effectiveness, its phenomenal growth and global reach, its ever-evolving organizational structures, its clients and their agendas, and more.

While Jansen concedes that much PR, although manipulative, is fairly innocuous—product rollouts

and celebrity “buzz”—a sizeable and very lucrative portion of the industry promotes ends that are deeply troubling: whitewashing corporate wrongdoing, propping up ruthless dictators, sowing confusion about issues such as global warming, and in Orwell’s words, “defending the indefensible.”

At the heart of Jansen’s concern is the observation that at its core PR practices are anti-democratic. PR initiatives are most effective when they are invisible, when their manipulative message goes unrecognized as such, and when their sponsors remain unknown. Yet invisibility violates the norms of transparency and accountability that democratic institutions require to function. At the very least, many PR activities sow confusion and destroy trust in public institutions, and that makes a grave problem for all of us.

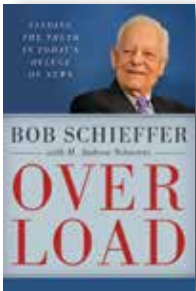
While the powerful have always had people to look after their interests, public relations as a commercial mercenary activity is relatively new and largely an American invention. Jansen traces its origins from the robber baron era, where it served to fight labor organizing and fend off calls for industrial regulation. Its methods were soon honed for wartime propaganda. With the rise of American commercial power, it was exported to the rest of the world where it plays a major role in promoting the neoliberal globalization favored by corporate power.

To illustrate its points, *Stealth Communications* contains a number of case studies showing high-stakes PR in action, among them the deceptive campaign conducted by an American firm to promote the Gulf War.

Stealth Communications is a carefully argued and information packed book whose riches and importance could be barely be touched on in this short review. Among those subjects I haven’t touched are nation branding, the use of PR by non-governmental organizations, and various efforts that are being made to critique and reform the industry. The information *Stealth Communications* contains is indispensable for an understanding of the modern world.

By Patrick Lufkin

Overload: Finding the Truth in Today's Deluge of News



In this timely book Bob Schieffer and H. Andrew Schwartz assess the current state of journalism and why it matters. While journalism faces many problems, they argue, it is not dead and, in fact, is more important than ever.

Schieffer (a veteran broadcaster) and Schwartz (a chief communications officer) together conducted more than a year of interviews with the principle players to report on how leading media companies are coping with a range of challenges—shrinking revenue, changing technology, the rise of social media, attacks on their integrity—to meet the needs of an audience that wants news 24/7, and on multiple platforms.

The authors stress that while platforms change, the core mission of journalism remains the same: to gather the facts, verify what is found, sort out what is important, report it so it can be understood, and when necessary, tell truth to power. In a global world, where hidden actors conduct influence operations to affect political and social outcomes, the authors maintain, the state of journalism is also a national security issue.

Much of the book describes what the major news outlets are doing to meet their many challenges. While the major newspapers still print, they are also developing a vigorous web presence, producing videos and podcasts, and experimenting with various subscription models to replace lost advertising revenue. The major broadcasters are also adjusting, releasing stories throughout the day, and offering star-power commentary.

While the new platforms—podcasts, video feeds, newsletters, blogs—have brought a fire hose of information, traditional journalism's function of curating the news through informed judgment and fact checking has largely dropped out, leaving everyone struggling to figure out what is important and true, hence the title: "*Overload*."

The new platforms have also changed the audience, largely by fragmenting it. In the past, most people received a commonly agreed upon body of news and facts. Now the audience is largely self-siloed, with different segments hearing—and believing and acting

on—different "facts." This is having a profound effect on the society, increasing strife and polarization.

To add to the mess, traditional journalism is often subjected to aggressive "kill the messenger" attacks waged by bad actors for financial or political gain.

While nothing is certain, there is reason to hope that the major national players will survive, and journalism will continue to serve the public interest. The local outlook is not so good. Many towns have been hit very hard, losing their local papers. Without newspapers to cover local events and keep politicians in check, the authors warn, we are liable to get levels of corruption we've never seen.

For anyone interested in a level-headed assessment of the current state of American journalism, *Overload* is well worth the read.

The Fixer: Secrets for Saving Your Reputation in the Age of Viral Media



The Fixer: Secrets for Saving Your Reputation in the Age of Viral Media is unabashedly a showcase for Michael Sitrick and his services. That said, *The Fixer* provides a fascinating, behind-the-scenes look into how a high-stakes public relations (PR) practitioner works in the real world.

Sitrick specializes in saving the reputations of individuals and companies experiencing a PR crisis, and he is good at it. He has turned the narrative around in many high-profile cases, many of them related in this book, and in his previous book, *Spin: How to Turn the Power of the Press to Your Advantage* (1998).

Each chapter focuses on a different case, describes the problem, and shows how creative thinking and quick actions were used to change the narrative into one more favorable to his clients. While shepherding strategy and message, Sitrick often works with teams of attorneys, social media specialists, and others to bring about the desired result.

Sitrick tells many great stories. Among them, how his team rescued the reputation of a woman who was being scapegoated for problems at Hewlett-Packard, how he marshalled fans and investors to help Roy Disney wrest the then sagging entertainment company from the control of Michael Eisner, the steps involved

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in helping a company save itself from attacks by “short sellers” bent on profiting by tanking the company’s stock price, and how he played an important role in restoring the reputation of the Michael Jackson Estate after the performer’s troubled final years and tragic death.

Out of his experience, Sitrick has distilled what he calls “Rules of Engagement,” each of which is illustrated and explained in the various stories. (If you want the details, read the book.) The essence is, to get, document, and work from the facts, get out ahead of the story, never lie, and maintain excellent friendly relations with the media.

Along the way, Sitrick makes many interesting points.

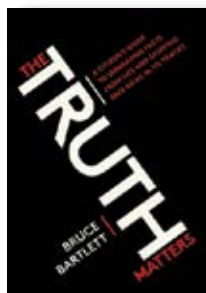
Individuals and companies can get targeted, even though they have done nothing wrong (political opponents, competitors, disgruntled employees). In such cases, do everything you can to get the facts and use them to change the narrative and get your story told. In most cases, “no comment,” amounts to malpractice. If you don’t tell your own story, your opposition will tell it for you.

When a client really does have a problem—they are facing bankruptcy, or someone in the firm has acted unethically—you should focus on the fix, what the client is going to do to set things right.

Interestingly, for his purposes, Sitrick downplays the importance of social media. It can be a starting off place, but stories rarely have real impact until they are picked up in the major press.

Whether you are in public relations, the media, or just want to have a better understanding of the behind-the-scenes of how news is shaped, *The Fixer* is an informative and lively read.

The Truth Matters: A Citizen’s Guide to Separating Facts from Lies and Stopping Fake News in its Tracks



When most people got their news from a regional newspaper or the nightly news, the scope of what they heard might be limited, but they could be reasonably sure it had been curated and comported with the agreed-upon facts. With the rise of the Internet, a flood of information has become available,

but responsibility for selecting what is important and reliable now falls on the individual.

With *Truth Matters: A Citizen’s Guide to Separating Facts from Lies and Stopping Fake News in its Tracks*, Bruce Bartlett comes to our aid. Inspired by E.B. White’s *Elements of Style*, which Bartlett admires, the book aims to provide an essential primer to responsible news consumption in the digital age.

In formulating his advice, Bartlett draws on years of experience working in and around the media. In a series of fifteen short articles, he offers a wealth of information to help you better understand and evaluate the news, including separating the trustworthy from the fake.

Early on, he covers conventions that govern the complex relations that exist between reporters and their sources, explains how leaks work, and defines such terms of art as “off-the-record,” and “deep background.”

In keeping with the title, much of the book offers tips and techniques for judging the quality of evidence and discusses such things as the importance of primary versus secondary sources, and contemporary records versus later representations. Throughout the book, Bartlett points to resources he trusts, some of them well known, others less so. Bartlett says reputable academic sources are usually trustworthy but warns that “think-tanks” have become highly politicized and must be regarded with suspicion.

To properly understand many stories, it is important to put numerical information in context. Bartlett discusses the traps that lie in statistical comparisons, points to resources for obtaining reliable statistics, and for doing such things as converting past amounts into current dollars. He also covers the problems of polls and polling.

Once difficult to access, he says, academic and scholarly research is becoming more easily available through websites and resources such as JSTOR and Google Scholar.

Bartlett offers several suggestions for how the media might better serve its audience, including paying more attention to the quality of links, and providing the full text of interviews.

Interestingly, in the Internet age, Bartlett regards libraries as more important than ever. Libraries can serve as guides to trustworthy information, and many offer online access to valuable resources most patrons would not be able to afford on their own.

While Bartlett points to resources throughout the text, for easy reference many of them are gathered in lists at the end of the book.

If you need help in coping in a post-truth world, the *Truth Matters* is an excellent place to start.

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About the Author

Patrick Lufkin is an STC Fellow with experience in computer documentation, newsletter production, and public relations. He reads widely in science, history, and current affairs, as well as on writing and editing. He chairs the Gordon Scholarship for technical communication and co-chairs the Northern California technical communication competition.

Review of Four Books on Media Landscape

Table 1: Books on Media Landscape Compared

	Truth Matters	Overload	The Fixer	Stealth Communications
Audience	General	General	General	Intermediate to Advanced
Major Strengths	<ul style="list-style-type: none"> • Format designed for easy reading and learning • Well thought-out practical advice • Clear and concise • Includes many excellent references and links 	<ul style="list-style-type: none"> • Well written and easily understandable by a lay audience • Clearly argues for the importance of its subject 	<ul style="list-style-type: none"> • Strong voice who speaks well for his special PR niche • Well-written in a lively style • Offers a good behind-the-scenes look at its specialty • Points illustrated with stories and entertaining examples • Offers sound advice for handling a PR crisis involving reputation 	<ul style="list-style-type: none"> • Well-written and well-argued • Brings much needed attention to its subject • Well researched; treasure trove of information for those interested in the subject • Gathers in one book a wealth of information not otherwise easily available
Major Weaknesses	None noticed	None noticed	Obviously self-promotional; may paint too rosy a picture of its PR specialty	The book covers a lot of ground from many perspectives. Some of the discussion may be beyond the interest level of some readers.
Comments	Trustworthy, and practical. Even experienced media consumers should find things they didn't know. Good value.	A good survey of current media landscape.	Entertaining and informative.	The clear argument and the wealth of supporting research makes it a very good value.
Rating (5-star scale)	****	****	****	*****
Cost (USD)	\$35.00	\$24.95	\$24.95	\$24.95

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Jackie Damrau, Editor

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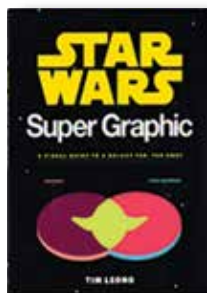
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Do I Make Myself Clear? Why Writing Well Matters..... 345
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Designing a UX Portfolio: A Practical Guide for Designers, Researchers, Content Strategists, and Developers 346
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Star Wars™ Super Graphic: A Visual Guide to a Galaxy Far, Far Away

Tim Leong. 2017. San Francisco, CA: Chronicle Books LLC. [ISBN 978-1-4521-6120-4. 176 pages. USD\$19.97 (softcover).]



Are you a Star Wars fan? While I am more into the Star Trek cosmos, I have the super-experts of the Star Wars universe right at home: my husband and our two daughters who are familiar with all the major characters and stories told in various movies, original and newly launched. When the latest Star

Wars movie, *The Last Jedi*, opened in our home town, my husband and the girls were one of the first to see the film. We are talking big fans here.

Our home library already includes quite a few encyclopedias on Star Wars characters, locations, planets, and vehicles, but Tim Leong's *Star Wars Super Graphic: A Visual Guide to a Galaxy Far, Far Away* is something completely different and very special. This book is Tim Leong's second in the *Super Graphic* row, following *Super Graphic: A Visual Guide to the Comic Book Universe*. And it is a masterpiece of compelling infographics, presenting information that is always entertaining, often puzzling and sometimes useless in an intriguing way.

Leong, currently the Creative Director at Entertainment Weekly magazine, knows how to create stunning design. Clearly, a book like *Star Wars™ Super Graphic* is born out of extraordinary love for science fiction and pop culture mixed with an artistic drive and madness.

Star Wars™ Super Graphic is full of colorful bar graphs, timelines, pie charts—so many kinds of visual representations of Star Wars knowledge that I was amazed at the sheer variety. Each one of the infographics is elegantly designed and has a modern touch.

The data and knowledge that the infographics explain will warm the heart of every Star Wars fan. For example, several infographics focus on the lightsaber, such as “The Lightsaber List” (pp. O36-O37), showing which character used which lightsaber color, because, as you probably know, “The color of a Jedi's lightsaber is based on its kyber crystal” (p. O37).

Rated the coolest infographic in the book by my daughters is “Dismembers Only” (p. O68). Here you

find an overview of all the characters that lost an arm or a hand in the films, more than I remembered. My favorite illustration on the other hand (!) was definitely “Star Words” (p. 170), which explains “a hidden grammatical pattern between the film titles of the original and prequel trilogies.” It reveals among other things that only one title contains a verb (*The Empire Strikes Back*).

Star Wars fans and especially those among us on the hunt for all the subtle details will enjoy *Star Wars™ Super Graphic*, just as my family and I did, when we spent a few afternoons browsing the book, each time finding new details. The only thing I missed when turning to the book and looking for a certain infographic was a table of contents.

Karina Lehrner-Mayer

Karina Lehrner-Mayer is a Senior STC member, holds a degree in translation and has more than 20 years' experience in Technical Communication. She works as a Documentation Specialist at the Austrian-based headquarters of ISIS Papyrus Europe AG, an international company offering solutions for inbound and outbound business communication and process management.

Interactive Data Visualization for the Web: An Introduction to Designing with D3

Scott Murray. 2017. 2nd ed. Sebastopol, CA: O'Reilly Media, Inc. [ISBN 978-1-491-92128-9. 442 pages, including index. US\$49.99 (softcover).]



If you'd like to learn programming basics for data visualization and thoroughly enjoy your experience, *Interactive Data Visualization for the Web: An Introduction to Designing with D3* is the book to use. It is carefully planned, thoughtfully written, and tested for the benefit of a wide audience

of nonprogrammers and programmers alike, with varied experiences in data handling, coding, and visual skills. Because of its underlying methodology, the book serves well as a course text, a reference manual, or a self-study guide.

Right from the start, Murray introduces the important concept of data visualization with D3 (Data-Driven Documents) and its advantages of communicating numerical information to others efficiently. He points out that dynamic data engages

people by expertly telling the story about an issue at hand. In addition, interactive visualization lets different audiences explore data differently: either by presenting its more general overview or allowing them to dig deeper in search of specific information.

In the first few chapters, Murray builds learners' general understanding of web technology fundamentals with the focus on the D3 concepts. Each subsequent chapter develops a specific data visualization skill/technique, by giving its clear description and purpose, code samples (in color!), and screenshots of desired outcome. Heightened sensitivity to learners' needs is embedded throughout the text. Clever analogies and humorous bits come to your rescue when you encounter a difficult chunk of information, or simply need a chuckle when the going gets tough. More importantly, multiple checks, troubleshooting tips, suggestions, and alternative ways of rendering information are strategically placed in parts of the text where one might encounter a problem or question. These invaluable text features help create a more confident and eager learner who is supported throughout each step of this intense programming journey.

But what happens at the end of this journey? What do you do after you worked through code samples and mastered many of the concepts and techniques in the book? How do you organize those important programming bits and pieces together to create your own coherent data visualization project? Chapter 16 reassembles the puzzle by examining a single D3 project dealing with electric cars. It gives a concise six-step sequence describing how to think about the data, work with it, and mold it into a dynamic visualization that tells an engaging, informative story to your audience.

The Appendix is my favorite section. It is rich in resources you need to become fluent in D3 basics. You might explore the excellent collection of interviews with established practitioners in the field of data visualization. The collection contains seven case studies illustrating D3's appeal, such as election results in the Netherlands, workers compensation benefits for lost body parts (USA), making hard mathematical ideas easy, etc. Other parts of the Appendix contain valuable resources in: (1) advancing learners' education in D3 through books, websites, and D3 interest groups; (2) code sharing to show off new projects or asking for help; and (3) referencing the most commonly used thematically organized D3 methods, and so on.

Nowadays, the need for data analysis and visualization is an increasingly sought-after skill in business, government, and education. *Interactive Data Visualization for the Web* provides a powerful tool for everyone interested in this crucial area of understanding data in today's world.

Tetyana Darian

Tetyana Darian is an STC member and a graduate student in mathematics. Her interests are in graph theory and its applications. Tetyana also is a part-time lecturer, teaching introductory mathematics courses.

The Chicago Manual of Style

The University of Chicago Press. 2017. 17th ed. Chicago, IL: The University of Chicago Press. [ISBN 978-0-226-28705-8. 1,146 pages. US\$70.00.]



With publication of its seventeenth edition, the venerable *Chicago Manual of Style* adapts to changes in technology and editorial preferences while retaining its long-established principles. (*Note:* I refer to the new edition and its predecessor as *CMOS17* and *CMOS16*, respectively.) You can see a short list

of major changes at <http://www.chicagomanualofstyle.org/help-tools/what-s-new.html>.

The editors know a thing or two about their core audience: we are word workers in the U.S. publishing industry who respect clear writing, need information adapted to changing times, and expect to find answers quickly within the 1,000+ pages.

Although the manual contains 10% more pages, longtime users don't need to learn a new overall structure. At the part and chapter level, *CMOS17* faithfully holds to almost the same structure as *CMOS16*. Part I, "The Publishing Process," describes the workflows for book and journal publishers and introduces us to manuscript preparation and editing, graphics, legalities, and more. "Style and Usage" opens with Bryan A. Garner's always perceptive "Grammar and Usage" and follows with nitty-gritty chapters on punctuation, spelling, names, abbreviations, mathematics, quotations, and other topics. Part III, "Source Citations and Indexes," is followed by the glossary, bibliography, and index.

But change is afoot! In dozens of places you read “in a departure from the recommendations in the previous editions.” Thus, the editors now recommend *internet* and *email* over *Internet* and *e-mail*. They document the increasing use of singular *they* and at last discourage the use of *ibid.*, in part because “in electronic formats that link to one note at a time, *ibid.* risks confusing the reader” (p. 759).

We find much new detail on using various electronic services and formats at various stages of publishing. Details are particularly rich on social media (totally lacking in *CMOS16*), PDFs, and digital object identifiers. But if you edit on hardcopy, take comfort: *CMOS17* retains the table of handwritten proofreaders’ marks.

CMOS16 contained a 30-page appendix on the history and uses of XML and other markup languages, publishing formats such as EPUB, and other technical developments. This appendix stood by itself, making the technology a separate, major topic. *CMOS17* takes a far more integrative approach, so that technology is now melded into the flow of the whole book, as it should be. We still hear of XML, for example, where appropriate, but we no longer have the marginally relevant paragraphs on the history of XML.

The thoroughly revised index remains 10% of the total word count and provides excellent accessibility to the detailed content.

The manual has a strong online presence: You can get the full text through the redesigned CMOS Online, the CMOS Shop Talk blog updates you on changes, and you can follow the editors on Twitter and Facebook @ChicagoManual.

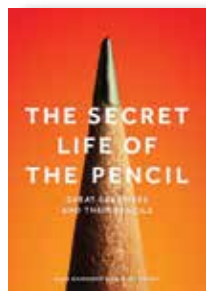
As always, you should view *CMOS* guidelines as recommendations to be adapted as your organization sees fit.

Avon J. Murphy

Avon J. Murphy is a technical editor in western Washington. A retired college professor and government writer, he is an STC Fellow, a contractor, and principal in Murphy Editing and Writing Services, specializing in computer and Web technologies. Avon served as book review editor for *Technical Communication* for 17 years.

The Secret Life of the Pencil: Great Creatives and Their Pencils

Alex Hammond and Mike Tinney. 2017. London, United Kingdom: Laurence King Publishing. [ISBN 978-1-78627-083-2. 144 pages. US\$15.99.]



The Secret Life of the Pencil: Great Creatives and Their Pencils is a marvelous “coffee-table book” of beautifully constructed images. This book contains 110 images of pencils and 30 pages of interviews of creatives that use pencils that is the result of Hammond’s and Tinney’s project of pencil portraits that tours

internationally as an exhibition of their talented work and supports the charity Children in Crisis. Hammond is a designer that specializes in product and packaging, and Tinney is a still-life and documentary photographer. Together, they created a book that speaks to those that experience joy over blank notebooks and new writing supplies.

William Boyd’s foreword starts off with a tale of a boy, Vladimir Nabokov, who was given a four-foot pencil from his mother. The pencil was tall, correspondingly thick, and contained lead the length of the pencil. The boy grew up to become a novelist. As Boyd points out, “A giant four-foot pencil delivered to a future writer...It seems almost too neat, too aptly significant” (p. 6). However, this tale sets the tone for the rest of *The Secret Life of the Pencil* in which various creatives share the pencils they use and some share how the pencil contributes to their work.

The pencils pictured in this book range in size, shape, color, design, and perspective. My favorite image from the book is the mechanical pencils of Sir Norman Foster, an architect, in which the pencils are divided into pieces showing the mechanical parts, lead, and erasers (pp. 66–67). It’s a beautiful image that leaves me wondering if someone was able to make the pencils whole again—they had so much life left.

The interviews are from a wide range of creatives, from makeup artists to photographers. My favorite question, only asked of one creative, is “If you could swap pencils with one person from history, who would it be?” To this Peter Jensen answered, “Christina of Denmark, Agatha Christie or Philip Larkin” (p. 128). Personally, I would relish the opportunity to swap pencils with Walt Whitman; what about you?

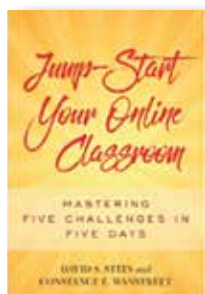
The Secret Life of the Pencil is for anyone that enjoys pencils and simplistic photography and design. In conclusion, this book has become a permanent fixture on my coffee table.

Sara Buchanan

Sara Buchanan is an STC member that serves as the NEO STC community newsletter editor and is the membership manager for the IDL SIG. She is a Technical Writer at LCS in Cincinnati, OH for the software, Rent Manager.

Jump-Start Your Online Classroom: Mastering Five Challenges in Five Days

David S. Stein and Constance E. Wanstreet. 2017. Sterling, VA: Stylus Publishing. [ISBN 978-1-62036-581-6. 160 pages, including index. US\$24.00 (softcover).]



Have you been tasked with conducting an online class and have no idea where to start? Or have you taught online courses before, but felt they were not effective? If so, then *Jump-Start Your Online Classroom: Mastering Five Challenges in Five Days* offers plenty of practical advice and resources to help you build an

effective virtual classroom environment.

Stein and Wanstreet define five challenges—“making the transition to online learning, building online spaces for learning, preparing students for online learning, managing and facilitat[ing] the online classroom, and assessing learner outcomes”—of online classroom development, and offer detailed plans for conquering each challenge (pp. x–xi).

The authors organized the book to effectively discuss these challenges. First, in the preface, they list each challenge and which chapters address that challenge. Then each chapter begins with insights from new online instructors about the specific topic and ends with a handy summary of points to remember and meaningful questions for reflection. Where appropriate, the authors provide links to online resources or refer to specific items in the appendix.

The appendix materials alone are worth the book's price. They include questionnaires, templates, and checklists to help you set up your online classroom. For instance, the “Beginning Online Instructor

Competencies Questionnaire” helps you identify what you already know about teaching online, and, more importantly, what you still need to know (p. 115). The appendix also includes exquisitely detailed sample message templates to help you welcome your students to the online class environment and spell out mutual expectations. The most valuable portion of the appendix is the tool kit for online instructors—a collection of best practices and tools curated by the authors from their protégés. The section on managing different behavioral issues (pp. 139–140) contains vital information that can also apply to synchronous learning situations.

Overall, this book could serve as a master class in establishing an online learning environment. Stein and Wanstreet offer web-based instructor resources such as rubrics to accomplish this. Even if you don't plan to teach an entire course online, perhaps even just leading a one-time webinar, the lessons in *Jump-Start Your Online Classroom* still hold relevance. For example, Stein and Wanstreet discuss in Chapter 4 the teaching presence and its importance in student development where they say, “Perhaps the most important action for an online instructor is to be present online” (p. 38). Presence goes well beyond just posting or asking discussion questions and assignments. In fact, online instructors serve as knowledge facilitators to help students synthesize what they have learned.

Although *Jump-Start Your Online Classroom* is geared toward first-time online instructors, veteran instructors can still find value. For new instructors, I recommend reading this book in linear order to address all five challenges from start to finish. More-experienced instructors can skip to the section(s) pertinent to their challenge areas. After all, according to the authors, online learning “is best used when the learners and instructor come together to understand the content deeply and to produce new understandings rather than simply rework present understandings” (p. 11).

Jamye Sagan

Jamye Sagan is an STC Senior Member with more than 15 years of technical communication experience. She is the Pharmacy Communications Advisor for H-E-B Grocery Company in San Antonio, TX. Jamye is active with the Instructional Design & Learning SIG and has also written several *Technical Communication* journal book reviews.

What is the History of the Book?

James Raven. 2018. Medford, MA: Polity Press. [ISBN 978-0-7456-4162-1. 192 pages, including index. USD\$19.95 (softcover).]



How do you define “book?” Do you reach up on your shelf, pull down, for example, a dictionary and call that a book? What about a CD? Is a 3-ring binder a book? What about material found in the cloud? Are they books?

Raven in *What is the History of the Book?* cautions that a book can be many different things. For example, the smooth side of a turtle shell was often used to inscribe material. The Chinese would paint characters on strips of silk and place them together without binding as would also the Arabs. Later, the Chinese developed woodblocks for character sets. Movable type was possible, but with over 50,000 characters, highly impractical. What, then, is a book? Where did it come from? What is its history? Does it only convey text?

Raven’s book begins with a definition and then, through six chapters, discusses the history of the book. Chapter 1 sets out the scope of his history. Raven then moves on to early history (2) and covers various studies of several type, including description, enumeration, and modeling such as catalogs, bibliometrics, and the like (3).

One approach Raven uses is that found in journalism: “who,” “what,” and “how” (4). He also lists some of the economic characteristics of the book. For example, in print, cost of material and labor (if known), and print runs. He also identifies some objects that could be called books: pamphlets, newspapers, periodicals, and so on (5). Finally, he discusses consequences (6).

Raven uses as examples mostly printed books, but with the caveat that several objects can be printed that may be called books like pamphlets, newspapers, and more. Historically, he draws on research from China that was producing what could be called books. In addition, he examines cuneiform tablets, among other such objects. It is interesting how the focus on the text comes before the book’s definition. Separating the two as Raven does makes defining the book easier.

How do technical communicators know how the readers read? Can they know exactly how the book will be read? Selectively? Randomly? Not at all? It is hard

to determine if a reader actually reads the book. Also, books can become political, social, and religious objects. When, for example, missionaries or conquerors first appear in a land, they bring printed materials to convert the natives.

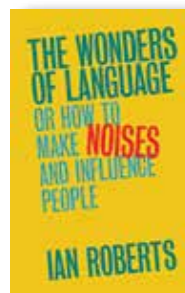
What is the History of the Book? is meant for students not only for the detail that Raven provides on the history of the book but also the numerous footnotes and bibliography for additional reading. As such, this book would serve well as a graduate course in bibliography. Technical communicators, on the other hand, would find value in the chapter on reading (5) and the influence of how readers read. This is a book that can find a place in the company library as well as in a seminar.

Tom Warren

Tom Warren is an STC Fellow, Jay R. Gould Award for Excellence recipient, and professor emeritus of English (technical writing) at Oklahoma State University, where he established the BA, MA, and PhD technical writing programs. Past president of INTECOM, he served as guest professor at the University of Paderborn, Germany.

The Wonders of Language: Or, How to Make Noises and Influence People

Ian Roberts. 2017. Cambridge, UK: Cambridge University Press. [ISBN 978-1-316-60441-0. 230 pages, including index. US\$23.99 (softcover).]



When you examine language, you discover that the output is composed of units or building blocks. If you have a thought that you want to express, you produce words (semantics) that are combined to produce sentences (syntax) that takes place in the context (pragmatics). At least that is the way language and

communication used to be thought of.

Roberts in *The Wonders of Language: Or, How to Make Noises and Influence People* takes us through the different language aspects from the sounds humans have been making for over 50,000 years to building new languages. He covers sounds (chapter 1), phonology (2), morphology (3), syntax (4), and semantics (5). Once he has explained these mechanical aspects of language, he addresses pragmatics (6), historical linguistics (7), and socio- and psycholinguistics (8, 9), and how to build a

language (10). An epilogue looks at human language compared with the languages of animals, plants, and sea life. (The central character is a cat named Clover.)

He concludes that language really must be central to the ability for “generating, storing, transmitting knowledge.... So understanding language means understanding a very big part of what it is to be human, what it is to be you. And that is perhaps the greatest wonder of language of all” (p. 182).

In discussing the many aspects of language, Roberts uses the technical terminology of linguistics. But, he has used boldface type to indicate that the terms and concepts appear in an extensive glossary. Even so, using that glossary only gives you a brief definition. You must fit the meaning into the discussion, and that means that you will have to work your way through the discussion, which is not an easy task. However, because Roberts’ focus is on the wonders of language, the effort is well worth the time.

The Wonders of Language is not a textbook (no apparatus) because it presents an overview of how language works. It is intended for students wanting to go on and study more about the history of linguistics. He also accommodates others such as technical communicators through an informal, personal style that does not suggest scholarly dryness. There are no footnotes, but he does use shaded boxes to explain difficult concepts that the glossary does not cover.

Further, Roberts helps you understand the technicalities of language and its wonder by providing numerous examples and, most unusual for a textbook, suggests that the readers skip the section or even a chapter if bogged down in technical vocabulary and concepts, but return later after having read some of the later chapters.

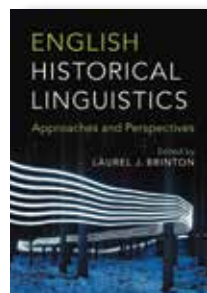
If you are looking for an introduction to language taken from a linguistics perspective, then Roberts offers real value. He is careful to make the various elements clear and his examples are highly relevant. While he does not include exercises, he does ask you to perform various sounds to understand how the noise really isn’t noise at all, but rather requirements for producing language.

Tom Warren

Tom Warren is an STC Fellow, Jay R. Gould Award for Excellence recipient, and professor emeritus of English (technical writing) at Oklahoma State University, where he established the BA, MA, and PhD technical writing programs. Past president of INTECOM, he served as guest professor at the University of Paderborn, Germany.

English Historical Linguistics: Approaches and Perspectives

Laurel J. Brinton, ed. 2017. Cambridge, UK: Cambridge University Press. [ISBN 978-1-107-53421-6. 410 pages, including index. US\$44.99 (softcover).]



When you mention linguistics, you might picture an academic counting words or syllables or sentence structures or developing an English chronology. Such views used to be an accurate picture. Now, however, academics and others recognize that there is more to linguistics than these surface items.

Brinton’s *English Historical Linguistics: Approaches and Perspectives* traces the rise of linguistics from its inception at the end of the 19th century by scholars in Leipzig, German to today. Along the way, linguistics has taken several approaches, blending with other discipline. For example, scholars have seen a connection between linguistics and psychology, and sociology among others. Brinton has selected 11 essays that show these different approaches and perspectives.

The book is a textbook for advanced students studying the historical linguistics with the apparatus normally associated with such: discussion of an approach or perspectives, case studies, exercises, references, a glossary, and an index. All that is missing is a concluding essay that ties the other essays together. Technical communicators and others can also learn how linguistics evolves.

Brinton’s anthology contains important essays (including one of her own on pragmatic linguistics) that demonstrate how far linguistics has come. For example, there are multiple approaches students and technical communicators will find useful as they learn more about language and specifically English.

Brinton’s opening essay provides a brief overview of the field and summarizes the essays to follow. She also

provides a short history of English historical linguistics. Each essay, beginning with the second, follows a pattern where the authors discuss the chapter's topic (an approach or perspective) followed by case studies and exercises.

Some of the key essays include historical linguistics (3), psycho-linguistics (4), grammar and lexicography (5) discourse-based linguistics (8), socio-historical linguistics (9), and geographical variation (12), among others.

Because technical communicators use language as their main tool and the more that they know and understand about it the more effective and efficient they can become, they should understand how that language evolves. *English Historical Linguistics* can provide that needed information.

Several of the essays can be useful for technical communicators. For example, essay 5 on how grammar and words interact suggests that words and usages evolve over time and eventually make their way into the grammar of a language community.

There are, however, several problems with the textbook if it is to be used by American students. For example, there is no conclusion. Likewise, there is no concluding essay tying all other essays together. What we have is a collection of individual essays built around two common themes with nothing to tie them together except Brinton's essay (1). While head notes supplying the links would be nice to have, they are not required. Such omissions could be made up with some sort of concluding chapter. There is, in short, no "So what?"

Tom Warren

Tom Warren is an STC Fellow, Jay R. Gould Award for Excellence recipient, and professor emeritus of English (technical writing) at Oklahoma State University, where he established the BA, MA, and PhD technical writing programs. Past president of INTECOM, he served as guest professor at the University of Paderborn, Germany.

Electronic Media, Then, Now, and Later

Norman J. Medoff and Barbara K. Kaye. 2017. 3rd edition. New York, NY: Routledge. [ISBN 978-1-138-90320-3. 330 pages, including index. US\$59.95 (softcover).]



What effects does electronic media have on "your" habits, including reading habits (all forms of print)? Your social habits? Medoff and Kaye have cited studies throughout *Electronic Media, Then, Now, and Later*, designed to answer these questions.

"People born since 1990 were introduced to technology early in life... They expect change and innovation at a much faster pace than people who grew up with traditional analog media" (p. 15). Can you remember a day when you did not use some form of electronic media? How did you feel? Lonely? Relieved? Apprehensive? Electronic media peoples our minds; it inhabits our dreams. In a way, this book is an invitation to explore ourselves.

Radio. We began with face-to-face communication. Electronic media has taken us way beyond it. Radio ushered in the ability to communicate one-to-many. Over its 30 years of dominance (roughly 1920 to 1950), radio became "the storehouse of American culture" (p. 37) and a template for programming formats in later mediums (sports and adventure; interviews, quiz show and comedies).

TV. In 1936 the BBC began broadcasting the first TV programs. But the industry did not catch fire until after World War II, when the materials for manufacturing TV equipment finally became available. At first, it was a live medium, featuring many high-quality theatre-like productions. The audience changed when the price of TV sets dropped, and programs shifted more towards a mass audience. TV has been the centerpiece of media for almost 70 years and is finally being nudged aside by the Internet (p. 7).

Computers. In some ways, a computer is like having another person in your house. It has been one of the most disruptive technologies: eliminating the typewriter and changing how we compose, how we access information, and how people communicate with each other.

The Internet. And, of course, the Internet, that started up in the 1960s and combines the elements of all the other media: print and broadcast. Since the

first web browser appeared, in 1992, the Internet has become “the most quickly adopted new medium in history” (p. 128). *Electronic Media, Then, Now, and Later* then leads us into mobile devices and some of the stars of the show: smartphones, ebooks, and tablets; Facebook, apps, and YouTube; and into the future, with the Grid and the Internet of Things (IoT); leaving us gasping, and sometimes chuckling, at amazing shards of data along the way.

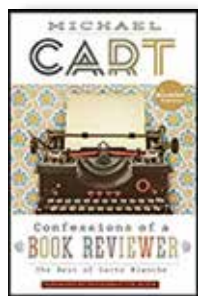
A few quibbles with the mechanicals: The book is abundantly illustrated, yet the images are in black and white, are not of the highest quality and have a matte finish. A few embarrassing mistakes: an image of a South African cave painting as well as the image of a petroglyph both dated to 1,500 years ago instead of 15,000 (pp. 2f). In addition, the inside margin is too narrow making it hard to read the end of a line. And finally, the body type is a little small for easy reading. Yet, *Electronic Media, Then, Now, and Later* contains an incredible picture of media and communication across the world, in the last hundred years.

Steven Darian

Steven Darian’s previous book was *Technique in Nonfiction: The Tools of The Trade* (2017). Branching out a bit, his latest is *The Wanderer: Travels and Adventures Beyond the Pale* (late 2018).

Confessions of a Book Reviewer: The Best of Carte Blanche

Michael Cart. 2018. Chicago, IL: American Library Association. [ISBN 978-0-8389-1645-2. 192 pages, including index. US\$45.00 (softcover).]



When you talk about books, you can discuss at least two things: the book and its content or the reaction to the book or content or both. Scholars, for example, frequently develop varieties of bibliographies, but offer confusion when asking about book/content, selection method, and purpose.

Cart’s *Confessions of a Book Reviewer: The Best of Carte Blanche* makes clear that you will be reading his reaction to the books that he has reviewed in his weekly column for *Booklist*, a weekly newsletter read mainly by all level librarians. These “Confessions” tell us his

biases as well as some limited history of Young Adult Literature (YAL).

In eight chapters, we get a lot of biographical detail about Cart. For example, he started writing reviews and his once-a-month column when he was in his 50s. We also learn that he was born in Logansport, Indiana and, as an adult, moved at least 10 times, hauling his estimated 15,000 books.

His monthly columns focus on what *Booklist* spotlights, but with the understanding that he is a champion of YAL. He has written several YAL books, conducted seminars on it, given countless talks, writes a blog, and has a TV show: *In Print*.

After chapters on reading and writing (Chapters 1, 2), Cart addresses book collections and collecting (2); YAL (3); historical fiction and romance (4); fantasy and science fiction (5); humor (6); biography (7); and memories and memorials (8). He concludes with a short piece on the columns.

Over the years, Cart has written, he claims, 253 columns about books. For *Confessions of a Book Reviewer*, he has selected 50 columns, starting with his first column and carrying through to 2018.

Cart argues for recognition of YAL as well as their authors. They seem to be forgotten when talking about the books.

I was curious that he does not write about “Frank W. Dixon” and “Carolyn Keene” pseudo names for several authors who wrote *The Hardy Boys* and *Nancy Drew* series. They are still an extremely popular series. Also, this book’s price may put you off, even if you are a member of the American Library Association (ALA). Other books in the series, however, are similarly priced. But all that aside, what do you get from Cart’s *Confessions*.

First, you learn a great deal about how book columns are written (the “Confession”)—book columns and not book reviews that appear in *Booklist* each week. If you want to learn about writing reviews, ALA has other books that explain the process. Second, he is clear about his prejudice. You will learn a lot about YAL, and that is especially important if you have young adults at home or are involved with the school librarian. Third, and finally, Cart is a good writer. You can learn a lot about style and especially sentence construction by reading and studying his chapters.

Tom Warren

Tom Warren is an STC Fellow, Jay R. Gould Award for Excellence recipient, and professor emeritus of English (technical writing) at Oklahoma State University, where he established the BA, MA, and PhD technical writing programs. Past president of INTECOM, he served as guest professor at the University of Paderborn, Germany.

Mobile e-Health

Hannah R. Marston, Shannon Freeman, and Charles Musselwhite, eds. 2017. Cham, Switzerland: Springer International Press. [ISBN 978-3-319-60671-2. 292 pages. US\$159.99 (ebook).]



The healthcare industry is undergoing a revolution. As medicine continues to specialize and grow more complex, healthcare providers endeavor to find ways to serve their patients more effectively. Since specialists tend to congregate in larger cities, allowances are needed for patients with disabilities,

elderly patients, and patients who may not have the financial means to travel long distances for care. *Mobile eHealth* addresses the ways in which we can use technology to improve health outcomes, as well as “drawing on expertise in the field to pause and reflect on the social, philosophical and human issues surrounding the accelerated development of mobile eHealth, telehealth and abundance of health and well-being apps” (p. 11).

Chapter 1 begins exactly where it should: by defining key terms in eHealth, which has a wide range of definitions depending on whom you ask. Musselwhite et al. clarify these meanings, “Put simply, eHealth is the use of computing and associated technologies serving and promoting health and well-being needs” (p. 4). In contrast, “Mobile health (mHealth) is the use of mobile, wireless technologies to connect, communicate and promote this computing with the aim of supporting individual’s health and well-being” (p. 4).

Unlike many texts covering mobile technologies for health, *Mobile eHealth* presents a balanced view of these technologies. Chapter 3 in particular examines the ways in which mobile technologies can cause more problems for the patient than it alleviates. For example, barriers to the use of mHealth include security and privacy

concerns, lack of compatibility with other medical records, accessibility issues with some disabilities, and an increased cost of care, among other problems.

Mobile eHealth offers a very comprehensive discussion of health technologies and their effectiveness, usability, and best design practices. The information is very detailed and meticulously written. For instance, Chapter 2: Universal Design Mobile Interface Guidelines (UDMIG) for an Aging Population covers all four principles of design guidance in detail: universal design (UD), Design for Aging (DfA), Universal Usability (UU), and guidelines for handheld mobile device interface design (MID) (p. 18).

Expert audiences will be delighted by the depth of information presented by *Mobile eHealth*. Each chapter offers a topical snapshot that could be, and often has been, a book in its own right. This comprehensive collection on the issues surrounding healthcare technologies is a treasure trove of information that experts will continue to revisit. Other, less well-versed audiences with a general knowledge of technical communication and information design will also benefit from reading *Mobile eHealth*, as it will teach them many new concepts and educate them on the best practices for using and designing mobile technologies used for healthcare. However, less knowledgeable audiences, such as beginning graduate students, may become overwhelmed by the sheer amount of terms, definitions, and acronyms to remember, as well as the paucity of practical examples or graphics in some chapters, which would help illustrate unfamiliar concepts.

Nicole St. Germaine-Dilts

Nicole St. Germaine-Dilts is an Associate Professor Associate Professor of English in the Technical and Business Writing Program at Angelo State University. Her research interests include technical communication for international and intercultural audiences and technical communication in the health fields.

You've Got 00:00:08 Seconds: Communication Secrets for a Distracted World

Paul Hellman. 2017. New York, NY: AMACOM. [978-0-8144-3830-5. 170 pages, including index. US\$17.95 (softcover).]



"You now have a shorter attention span than a goldfish...eight seconds" (opening page). That's according to a 2015 Microsoft study on attention spans. What has caused this short attention span? According to scientists, it is a result of smartphones.

In *You've Got 00:00:08 Seconds*, Hellman states that others make split-second decisions about us. "[People decide] whether or not to listen to you, or read your emails, or, in general, give you the time of day" (p. xvii). Whether you are calling into a meeting from home or you are present in the meeting room, you have only seconds before you're judged. People judge not only by your body language, but also by your voice. For example, do you speak softly, or do you end your statements sounding like questions? You can easily change how you project to others even when dialing into a meeting. For example, standing when you speak makes you project better. In addition, you can move around to sound more dynamic. Lastly, you can smile, and you'll sound friendlier.

Hellman has developed three strategies for improved communication: focus, variety, and presence. As he explains these, he suggests tactics. When communicating, he uses his Fast-Focus Method™. Variety, whether physical, visual, or vocal, captures the attention of others. Presence, for example, eye contact, projects confidence.

I especially liked Hellman's Fast-Focus Method™. He states that every audience, whether it's a group of people at work or someone in your household, wants answers to three questions (p. 12):

- Why should I listen (or read this)?
- What exactly are you saying?
- What should I do with this info?

These questions are especially helpful if you are planning to present to a customer. What happens, though, if you are scheduled to give a 20-minute presentation, but you are told you only have five minutes in which to present? Hellman advises to

start with your conclusion. Then, you can tell how you reached the conclusion. Lastly, close with your conclusion.

Besides tips for preparing customer presentations, he also explains how you can talk about your achievements in a job interview; Hellman uses the acronym SOAR. Describe the Situation. Explain the Obstacle. Identify the Action taken. Lastly, describe the Result.

Hellman also devotes an entire chapter to tips for sharpening your emails. For example, he suggests capturing attention using the subject line. However, he notes that there are times when it is better to place a phone call instead of an email. When you receive an email that requires a response, it is important to respond quickly.

You've Got 00:00:08 Seconds contains helpful advice for many communication situations. Hellman supports his advice by including stories, which make his advice memorable.

Rhonda Lunemann

Rhonda Lunemann is a technical writer with Siemens PLM Software and is a senior member of STC's Twin Cities Chapter. She assists in arranging programs for the Twin Cities Chapter.

Digital Media & Society

Simon Lindgren. 2017. Thousand Oaks, CA: SAGE Publications Inc. [ISBN 978-1-4739-2501-4. 320 pages, including index. US\$36.00 (softcover).]



The adage holds true: don't judge a book by its cover, especially in the case of *Digital Media & Society*. While the book's cover contains a whimsical photograph of a squirrel wielding a flamethrower, do not be fooled into thinking that the contents are equally whimsical. What lies

within is a complex and detailed analysis of modern society and how digital information impacts it.

Lindgren presents an intense examination of society in the digital age. He breaks the book into four main sections: theories, topics, tools, and a conclusion. Each section is further divided into topics ranging from social media, to digital activism, to digital ethnography. Chapters begin with a callout highlighting

key concepts and questions to be addressed by the chapter. For example, “How does the evolution of digital society relate to visual culture?” appears at the start of Chapter 6, Digital Visuality and Visibility (p. 109). Embedded within each chapter are exercises, such as, “Try to speculate about different things that might motivate people to take and share [selfies]....In a sociological sense: What does a selfie ‘say?’” (p. 114). Concluding each chapter are lists of suggested further reading materials. The chapter’s structure contains those elements but tied into a careful presentation and study of a given concept. Sources are cited, and examples given to provide context and to illustrate the concept Lindgren is examining. In this manner, he introduces you to a concept, provides the history of that concept, dissects it from a sociological viewpoint, while engaging you to think critically about the issue.

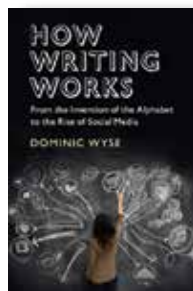
Overall, *Digital Media & Society* provides an insightful, in-depth investigation of modern society and how different forms of media affect it. Contemporary electronic media and their predecessors are well represented, ranging from an old school bulletin board system (BBS), to Snapchat, to Eric Snowden. If you are interested in learning about electronic media and why it affects your life and impacts the world today, then *Digital Media & Society* is a resource for you, even if you get it as a paperback and not digitally on your Kindle.

Timothy Esposito

Timothy Esposito is an STC Associate Fellow with over 15 years of technical communication experience. He is currently president of the STC Philadelphia Metro Chapter and chair of the Distinguished Community Service Award Committee. Before becoming president, Timothy was chapter vice president, treasurer, webmaster, and scholarship manager.

How Writing Works: From the Invention of the Alphabet to the Rise of Social Media

Dominic Wyse. Cambridge, UK: Cambridge University Press. [ISBN 978-1-316-63606-0. 240 pages, including index. US\$32.99 (softcover).]



In *How Writing Works: From the Invention of the Alphabet to the Rise of Social Media*, Wyse embarks on a “multidisciplinary pragmatist exploration” of the elusive process of writing (p. 53). He is not interested in proscribing a system of effective writing; rather, Wyse wants to discover how writing works by

analyzing it through different lenses. This book is not a quick run-through—it is a dogged academic study of writing that delves into the history, psychology, philosophy, pedagogy, and mystery of writing and how the writing process works.

This book is ambitious in its scope—perhaps too ambitious. Wyse covers an incredible cross-section of information from different disciplines. Chapter 1: Thinking about Writing and Language orients the reader to different philosophical viewpoints regarding writing, from the Ancient Greeks to Wittgenstein’s theory of language-games. Chapter 2: A History of Writing describes the development of writing in detail, from the developments of cave paintings and hieroglyphs to the rise of computer languages and social media (p.53). Chapter 3: Writing Guidance discusses the effectiveness of different types of writing guides, from “Media and Journalism” and “The Dissertation and Its Thesis” to “Fiction Writing Perspectives.” In Chapter 4: Expert Writers, Wyse delves into writer interviews in the Paris Review to gain insight on how professional creative writers produce work. Chapter 5: Creativity and Writing looks at new methods for enhancing creativity in children through experimental afterschool programs started by famous writers like Dave Eggers and Nick Hornby. Chapter 6: Novice Writers and Education examines the complications of creating effective writing curricula for children in Britain and Africa. Chapter 7: The Process of Writing details Wyse’s journey of writing this book through the analysis of his writing diary. Each chapter feels like it could be the introduction to a distinct book, though Wyse does his best to tie them together with transitions and the tenuous thread of relating

writing and music—a connection both over-used and under-explained.

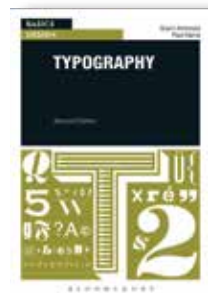
How Writing Works provides brain food for any writer who wants a better understanding of writing and the process of writing. However, it is not as useful for technical communicators looking for tips and inspiration. This is a heady book full of complicated philosophy and thought on writing more than it is a guide for how writing works. The book is by no means bedside reading material, though there is a lot of fascinating material in it.

Dylan Schrader

Dylan Schrader is a graduate student in the MA in Professional Communication program at the University of Alabama in Huntsville, where he also works as a grant researcher in the Office for Proposal Development.

Typography

Gavin Ambrose and Paul Harris. 2nd ed. 2017. London, UK: Bloomsbury Visual Arts. [ISBN 978-1-4742-2528-1. 200 pages, including index. US\$29.95 (softcover).]



Geared toward students, *Typography* is part of Bloomsbury's Basics Design series and provides a bird's-eye-view of topics surrounding typography such as setting type, type production, and methods of creating a final solution. This revised 2nd edition now includes a brief history offering context and

understanding about the evolution of typography. Although design and content sets this up to be more of a lookbook with bite-sized readable content, rather than a textbook, the glossary and index supports this to be an informational reference.

While this is truly a “basics” book, offering a limited overview of each topic, the design of that content on slick pages creates an experience within itself. Large typographic treatments act as more than readable text, becoming graphic elements creating a familiar system throughout and full-page imagery on every spread gives real-life examples that visually illustrate the subject at hand.

Navigation is organized by sections hosting a list of relevant topics that present short explanations, visual

references, and examples of professional work reflecting that topic. While some of the organization appears odd, all major content concerning the fundamentals of typography is covered. At first glance the table of contents seems logical, but the first section claims to look at the most commonly used terms in typography. Several typography terms aren't mentioned here, but instead receive their own sections later on in the book.

Ending each section is an “Industry View” featuring one of the studios that have contributed project examples to this book. These mini-interviews provide insight into studio work and their thought processes with questions about constraints, philosophies and creativity. The last section focuses on execution and final solutions, or Type Realization. This section offers quick insights to techniques—what they are, what they look like and the benefit of using them. These methods result in tangible answers, because despite an ever-increasing demand for digital solutions there is still a need to be fluent in tangible design and awareness of how effective those details can be in achieving something special and unique.

The book ends with case studies highlighting student work, which ultimately reinforces who this book is geared toward by showing what their peers are doing. Overall, the content provides a breadth of information of typography-related issues, but one could argue that although the “why” explanations are there, they are sometimes stated in an implied manner that lacks directive clarity necessary to an audience that needs these “basics”, which ultimately makes it perfect for a beginner's typography course.

Lanie Gabbard

Delana (Lanie) Gabbard is an associate professor of graphic design with a specialty in typography at the University of Central Oklahoma after several years of working professionally as a graphic designer. She is an award-winning designer and has been published academically and online.

Confident Digital Content: Master the Fundamentals of Online Video, Design, Writing and Social Media to Supercharge Your Career

Adam Waters. 2018. London, England: Kogan Page. [ISBN 978-0-7494-8094-3. 184 pages, including index. \$19.95 (softcover).]



Adams, a British journalist working in digital content for over 10 years, explains that digital content includes writing, audio, still images (including still photography), and video. Demand is across nearly all industries and types of organizations.

Digital content became popular just before the turn of the century and was designed mostly for desktops. Anyone communicating with the public (newspapers, TV stations, public relations firms) built websites to share their content.

Early digital was the same as their real-world material. Two innovations that shaped the modern digital world were social media and the iPhone. Together, they turned things upside down. “People could broadcast to the world from wherever they were” (p. 3). iPhone cameras were as powerful as dedicated equipment costing a fortune ten years earlier. Smartphones have become revolutionary.

Another major impact of social media is on promotion and advertising.

Smartphones allow for incredibly accurate data and analytics by fine targeting of the audience. It tells you how many times a piece of content has been viewed. To put it bluntly, almost everything is measurable.

The majority of Internet usage is now on mobile devices, that overtook desktops in 2016, which has forced publishers to reconsider how they share content with their audience. For example, widescreen video versus a smaller tall screen on iPhones: TV channels must take existing footage and make it more concise or vertical.

Confident Digital Content contains separate chapters on social media; building a digital community; the four building blocks of the field (writing, video, stills, and audio); plus, how to evaluate your content.

Waters stresses that when social media first came out, it was used for broadcasting things—one-way. Today it’s where people talk to each other: it’s two-way. The best digital content is conversational, not broadcasting and hoping people will listen. The

difference is “quantum.” Before, most organizations hired companies to communicate with their audience or market. Now, it’s rare for organization “not” to be on social media.

Some chapter comments are a bit diffuse; others seem right on target. But Waters counsels us in advance, that this is not a textbook, but rather a field overview, plus some of his special insights. About 85% of digital video is watched on smartphones, with the sound turned off. This tells us that the story line must be clearly presented by the visual imagery alone.

Waters cites a 2016 Pew Foundation study that people spent twice as long reading in-depth articles on their cell phones than short-form articles; the opposite of what we’d expect. Things that attract the viewer include eye-catching headlines and short, interesting sentences. The best content, he suggests, combines photography, writing, and audio.

Waters emphasizes that if you’re looking for a career in digital content, the key is to develop an expertise in one area and acquire a working knowledge of the other three.

Steven Darian

Steven Darian’s previous book was *Technique in Nonfiction: The Tools of The Trade* (2017). Branching out a bit, his latest is *The Wanderer: Travels and Adventures Beyond the Pale* (late 2018).

Do I Make Myself Clear? Why Writing Well Matters

Harold Evans. 2017. New York, NY: Little, Brown and Company. [ISBN 978-0-316-27717-4. 408 pages. US\$27.00.]



Harold Evans, in *Do I Make Myself Clear? Why Writing Well Matters*, provides readers practical advice on writing clearly. His many years of experience editing (*The Sunday Times* and *The Times* of London, and now editor at large for Reuters) have rendered Evans an expert on “how words confuse and mislead”

(p. 4), and he hopes this book “can...help you to say... what you want to say concisely, without ambiguity” (pp. 28–29).

The tone of *Do I Make Myself Clear?* is humorous, often sarcastic, making it fun to read, and each chapter

begins with a witty cartoon from *The New Yorker*. But Evans' book is serious business. He wants to teach readers how to clarify unclear writing. To get his points across, he divides the book into three sections.

The first section, Tools of the Trade, concentrates on basic techniques for creating prose that is easy to read and understand. Evans uses examples of unclear writing, ranging from newspaper captions to corporate reports to travel guides, to teach writers how they can improve their own work. Employing his editing prowess to ferret out, among other writing no-no's, passive voice, zombies (nouns that become verbs), adverbs, flesh eaters (unnecessary words), and negatives, Evans offers his suggested edits with the original text to illustrate the improvements. In addition, he includes lists of zombies, flesh eaters, and unclear words to avoid.

Section two, Finishing the Job, moves on to polishing and unifying the finished product. Evans urges writers to scrutinize the meanings of the words they have chosen. Weak, imprecise, or misused words can dilute the effectiveness, and clarity, of their writing. A list in this section helps writers distinguish between further and farther, and appraise and apprise, and understand the true meaning of words such as livid and virtually. The author also gives advice on narrative techniques.

The final section, Consequences, examines the kinds of consequences that result from unclear writing. Writers may not write clearly simply because they lack the knowledge to do so. Or they may intentionally confuse readers. "Slipshod writers...visit cruel and unusual punishment on our language. They know no better. Worse...are the competent writers who set out with intent to deceive" (p. 346). Evans has no trouble finding examples in government documents, insurance policies, car rental paperwork, and technology company annual reports in which the language is so dense and hard to understand that it can lead not only to confusion but sometimes to deadly outcomes.

Do I Make Myself Clear? is a helpful guide to writing clearly and correctly. I enjoyed Evans' humor, although I sometimes thought his amusing chitchat distracted from his points. However, his editing examples made perfectly clear what he was trying to get across. I recommend the book for writers who want to brush up on basic skills and practice editing their own work.

Linda Davis

Linda M. Davis is an independent communications practitioner in the Los Angeles area. She holds an MA in Communication Management and has specialized in strategic communication planning, publication management, writing, and editing for more than 25 years.

Designing a UX Portfolio: A Practical Guide for Designers, Researchers, Content Strategists, and Developers

Ian Fenn. 2018 (Early Release). Sebastopol, CA: O'Reilly. [ISBN 978-1-4919-2345-0. 160 pages. US\$29.99 (softcover).]



In *Designing a UX Portfolio: A Practical Guide for Designers, Researchers, Content Strategists, and Developers*, Fenn tries to solve a big problem in the burgeoning user experience (UX) field: given the diverse job responsibilities of UX careers, combined with differing interpretations of UX careers by

recruiters and employers, how does a prospective applicant create a professional, coherent UX portfolio that is effective for all intended audiences? This proves to be a difficult problem to address, but Fenn addresses it well.

Rather than giving tips on cobbling together a passable UX portfolio, Fenn describes an effective, on-going process for developing and maintaining a UX portfolio throughout one's career that is beneficial for all technical communicators. He warns against assembling a portfolio of documents, sitemaps, and wireframes in the rushed, final moments before an application or a job interview. Rather, Fenn suggests helpful long-term solutions, such as keeping a detailed logbook of completed projects, using narrative to show how projects were accomplished, and using the most appropriate projects for each application.

In Chapter 1, Fenn defines what a UX portfolio is and, just as importantly, what it should not be. In Chapter 2, he explains the benefits of having a UX portfolio beyond filling in the job application requirement. In Chapter 3, "Know Your Users," Fenn outlines the constraints on recruiters and hiring managers, as well as the effect job roles and UX maturity level in a company have on what kind

of portfolio needs to be created. Chapter 4 deals with “Preparing Your UX portfolio,” which details the effective tactics for creating and maintaining a UX portfolio throughout one’s career. Chapter 5 outlines the basics of creating a UX portfolio, such as effective writing practices, typography, and image choices, as well as whether to use an online portfolio or a PDF portfolio. Chapter 6 focuses on “Nailing the Introduction,” and Chapter 7 provides a detailed look at case studies. Chapter 8 outlines effective categories one can use to fortify a UX portfolio, such as training and education, awards and honors, speaking engagements, and writing and podcasting. Chapter 9 deals with “Common Constraints in UX Portfolio Design,” such as limited work history, changing careers, and working around non-disclosure agreements. Chapter 10 illustrates how to evaluate and review a UX portfolio.

While UX professionals looking for a quick, easy-to-use template for how to assemble a UX portfolio may be disappointed, *Designing a UX Portfolio* provides UX and technical communication professionals with a career-long method for developing and maintaining an original, well-conceived, and audience-centered portfolio that can be restructured for every job application. Also, UX and technical communication professionals will gain a better understanding of what they have done in their careers, as well as what they want to do in the future.

Dylan Schrader

Dylan Schrader is a graduate student in the MA in Professional Communication program at the University of Alabama in Huntsville, where he also works as a grant researcher in the Office for Proposal Development.

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STC Online Courses	6
STC Summit Pre-Conference Courses (full day)	6
STC Summit Pre-Conference Courses (half day)	3
STC Annual Summit	8
Begin and complete a college-accredited course related to the Technical Communication field	8
Published articles that relate to any aspect of <i>Technical Communication</i> (2/article)	2
Published books publicly available on topics related to <i>Technical Communication</i> (5/book)	5
Presentations at conferences related to aspects of <i>Technical Communication</i> (2/presentation)	2
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Lyn Gattis, Editor

The following articles on technical communication have appeared recently in other journals. The abstracts are prepared by volunteer journal monitors. If you would like to contribute, contact Lyn Gattis at LynGattis@MissouriState.edu.

"Recent & Relevant" does not supply copies of cited articles. However, most publishers supply reprints, tear sheets, or copies at nominal cost. Lists of publishers' addresses, covering nearly all the articles we have cited, appear in *Ulrich's international periodicals directory*.

Collaboration

Distributed cognition and embodiment in text planning: A situated study of collaborative writing in the workplace

Clayson, A. (2018). *Written Communication*, 35(2), 155–181. doi: 10.1177/0741088317753348

"Through a study of collaborative writing at a student advocacy nonprofit, this article explores how writers distribute their text planning across tools, artifacts, and gestures, with a particular focus on how embodied representations of texts are present in text planning. Findings indicate that these and other representations generated by the writers move through a spectrum of durability, from provisional to more persistent representations. The author argues that these findings offer useful insights into the relationships among distributed cognition, materiality, embodiment, and text planning and have implications for practitioners and students of writing. Additionally, the author recommends that scholars further investigate the ways in which embodied representations of texts are generated through lived experiences with the materials of writing."

Diana Fox Bentele

Communication

Change but no climate change: Discourses of climate change in corporate social responsibility reporting in the oil industry

Jaworska, S. (2018). *International Journal of Business Communication*, 55(2), 194–219. doi: 10.1177/2329488417753951

"Using corpus-linguistic tools and methods, this article investigates the discourses of climate change in corporate social responsibility and environmental reports produced by major oil companies from 2000 to 2013. It focuses on the frequency of key references to climatic changes and examines in detail discourses surrounding the most frequently used term 'climate change.' The analysis points to shifting patterns in the ways in which climate change has been discursively constructed in the studied sample. Whereas in the mid-2000s, it was seen as a phenomenon that something could be done about, in recent years, the corporate discourse has increasingly emphasized the notion of risk portraying climate change as an unpredictable agent. A proactive stance signaled by the use of force metaphors is offset by a distancing strategy often indicated through the use of hedging devices and 'relocation' of climate change to the future and other stakeholders. In doing so, the discourse obscures the sector's large contribution to environmental degradation and 'grooms' the public perception to believe that the industry actively engages in climate change mitigation. At the methodological level, this study shows how a combination of quantitative corpus-linguistic and qualitative discourse-analytical techniques can offer insights into the existence of salient discursive patterns and contribute to a better understanding of

the role of language in performing ideological work in corporate communications.”

Katherine Wertz

Disclosing principles of IR [investor relations] communication: Rhetorical moves for constructing transparency

Koskela, M. (2018). *International Journal of Business Communication*, 55(2), 164–193. doi: 10.1177/2329488417735645

“A functioning financial market requires transparency of listed companies. Transparency is a communicative practice ensuring that stakeholders have all relevant information about a company to make informed financial decisions. This article discusses how transparency is communicated through a genre specifically designed for this purpose, disclosure policy. A disclosure policy is a communication strategy document in which companies define their investor relations communication principles and thereby deliver a transparent image of themselves. The data for this study consist of 13 disclosure policy documents published in English on investor relations websites of listed companies. Methodologically the study combines a rhetorical moves analysis with a semantic approach to intertextuality. The results of the analysis indicate that following a consistent genre pattern enables companies to directly address requirements of authorities but also leaves room for company-specific characterizations. In order to portray a rhetorically convincing image, transparency characterizations need to reflect the company strategy.”

Katherine Wertz

How text presentation and financial literacy affect pension communication success

Nell, L., Lentz, L., & Maat, H. P. (2018). *International Journal of Business Communication*, 55(2), 135–163. doi: 10.1177/2329488417748298

“This study examined the effects of (a) text presentation and (b) prior knowledge and language skill on finding information in financial documents. First, the participants filled out tests that measured their levels of vocabulary, reading skill, domain knowledge, and

topic knowledge. Subsequently, they read an on-screen text on pension information in either a linear structure (‘nonlayered’) or a hypertext structure (‘layered’). Readers’ performance was measured by verbal scenario questions. No difference was found for text presentation. Language skill and domain knowledge were both important predictors for finding, whereas topic knowledge was not associated with readers’ performance at all. When differentiating between text presentation conditions, [the authors] found that domain knowledge only plays a role in the nonlayered condition, not in the layered condition. These results indicate that the set of skills needed to successfully read a document varies with both type of task and type of reading, confirming prior research.”

Katherine Wertz

JPMorgan Chase, Bank of America, Wells Fargo, and the financial crisis of 2008

Hearit, L. (2018). *International Journal of Business Communication*, 55(2), 237–260. doi: 10.1177/2329488417753952

“Following the financial crisis of 2008, major banks such as JPMorgan Chase, Bank of America, and Wells Fargo attempted to rebuild stakeholder and shareholder trust in the American financial system. Through a discourse analysis of JPMorgan Chase, Bank of America, and Wells Fargo’s legitimization efforts, this study provides additional research on the practice of strategic financial communication. Specifically, this article found how JPMorgan Chase, Bank of America, and Wells Fargo responded to questions about their actional and institutional legitimacy in their practice of issue management was echoed within each bank’s press coverage and organizational discourse. Yet this study also found that banks that were better able to directly respond to media critique more effectively navigated the financial crisis. This study underscores the importance of careful communication in managing shareholder and stakeholder concerns and rebuilding public trust in their corporations.”

Katherine Wertz

**The simple truth: Ambiguity works.
Discursive strategies by Swedish public
authorities during the 2008 financial crisis**

Johansson, C., & Nord, L. (2018). *International Journal of Business Communication*, 55(2), 220–236. doi: 10.1177/2329488417748298

“The global financial crisis that broke out in 2008 affected a large number of governmental, public, and private organizations. This article explores communication of public authorities in Sweden during the crisis, and highlights their discursive strategies between 2008 and 2010, analyzing press releases. As an analytical point of departure, complexity theory is combined with theory on strategic ambiguity in order to analyze which communication strategies were employed by the authorities. Results show that the public authorities embraced complexity and ambiguity differently in their communication, and consequences of their different approaches are discussed. The study also confirms that the different roles of significant actors during a crisis influence the selection of possible message strategies.”

Katherine Wertz

Design

**Raman identification of cuneiform
tablet pigments: Emphasis and
colour technology in ancient
Mesopotamian mid-third millennium**

Chiriu, D., Ricci, P. C., Carbonaro, C. M., Nadali, D., Polcaro, A., & Collins, P. (2017). *Heliyon*, 3(3), 786–795. doi: 10.1016/j.heliyon.2017.e00272

“Cuneiform tablets tell the life and culture of Sumerian people in a sort of black and white tale because of the binary engraving technique. A leading question arises: Did Mesopotamian people apply some kind of colour to decorate their tablets or to put emphasis on selected words? Some administrative and literary Sumerian cuneiform tablets of mid-third Millennium B.C. from the site of Kish (central Mesopotamia, modern Iraq) were dug up in twentieth-century and stored at the Ashmolean Museum of the Oxford University. Non-destructive micro-Raman spectroscopy is a powerful

technique to detect the presence of residual pigments eventually applied to the engraving signs. Yellow, orange, red and white pigments have been detected and a possible identification has been proposed in this work. In particular yellow pigments are identified as Crocoite (PbCrO_4), Lead stannate (Pb_2SnO_4); red pigments—hematite (Fe_2O_3) and cuprite (Cu_2O); White pigments—Lead carbonate (PbCO_3), calcium phosphate ($\text{Ca}_3(\text{PO}_4)_2$), titanium dioxide (TiO_2), gypsum ($\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$); orange pigment a composition of red and yellow compounds. These results suggest that Sumerian people invented a new editorial style, to overcome the binary logic of engraving process and catch the reader’s eye by decorating cuneiform tablets. Finally, the coloured rendering of the tablet in their original view is proposed.”

Edward A. Malone

**Toward a topos of visual rhetoric:
Teaching aesthetics through
color and typography**

Welhausen, C. A. (2018). *Journal of Technical Writing and Communication*, 48(2), 132–150. doi: 10.1177/0047281616646752

“This article proposes a heuristic that teachers and students can use together to create a vocabulary for discussing the aesthetic aspects of color and typography in document design work. By using this framework, teachers and students can generate a collection of shared visual topoi or commonplaces for describing the aesthetic value of color and typography that they can then draw from to inform visual analysis and production work.”

Anita Ford

Editing

Building a scholarly multimedia publishing infrastructure

Ball, C. E. (2017). *Journal of Scholarly Publishing*, 48(2), 99–115. doi: 10.3138/jsp.48.2.99

“This article provides a preview of Vega, a new scholarly publishing platform in development (set to be released in late 2017). With twenty-plus years of experience publishing scholarly multimedia in the journal *Kairos*, the author summarizes editorial practices for multimedia content in terms of the scholarly, social, and technical infrastructures required to sustain digital media-rich publishing venues. Vega is an outgrowth of those practices that aims to provide a stable platform for training editors, publishers, and authors in how to create, edit, and maintain the scholarly record.”

Edward A. Malone

Evaluating manuscripts for copy-editing: The view from a managing editor

McCarthy, J. (2017). *Journal of Scholarly Publishing*, 48(3), 161–167. doi: 10.3138/jsp.48.3.161

“To evaluate the editing needs of a manuscript in order to estimate the hours required to copy-edit it, a managing editor relies heavily on information about the nature and size of the book’s audience; on the quality of the writing, including clarity, spelling and punctuation, grammar, and consistency of hyphenation and capitalization; on apparent factual accuracy; and on the extent of the scholarly apparatus as well as tables and figures. Acquisitions editors can play a key role in determining the level of copy-editing a manuscript receives through the information they share about the author and the manuscript.”

Edward A. Malone

Speaking of editing: The nomenclature of copy-editing

Fretz, M. J. H. (2017). *Journal of Scholarly Publishing*, 48(4), 243–267. doi: 10.3138/jsp.48.4.243

“Publishing professionals concern themselves with the textual and graphic details of the content they publish. Editors, specifically, are responsible for checking and correcting the details of language, style, format, and typography. As precise as editors are paid to be, the nomenclature employed by editing professionals to identify the type of editing required by manuscripts, to communicate about editorial activity, and to evaluate editorial work is, ironically, imprecise. This article identifies the nomenclature used in the publishing industry, the scholarly publishing sector specifically, to label, describe, and discuss editorial activity. It provides an overview of terminology and definitions garnered from a review of literature on the subject of editing. It also presents the results of an original survey of editorial professionals, conducted online, which solicited responses to questions about terms and valuations in the practice of copy-editing. Based on these data, the article draws conclusions and makes suggestions about potential courses of action for standardizing editorial nomenclature in the publishing industry.”

Edward A. Malone

Education

Can workplaces, classrooms, and pedagogies be disabling? [Introduction to special issue]

Oswal, S. K. (ed). (2018). *Business and Professional Communication Quarterly*, 81(1), 3–19. doi: 10.1177/2329490618765434

In the preamble to this special issue, Oswal lays out both the history and implementation of the Americans with Disabilities Act (ADA) of 1990. “[T]he readers will find a variety of topics stacked under the intersecting category of disability and accessibility within the covers of this special issue. . . . [T]he articles presented here speak to the workplace context—whether it is the blind workers’ place of service or the university as a place of work and professional practice.

. . . This issue calls upon business and professional communication faculty to employ their management and leadership skills through inclusive curricula to foreground, to demystify, and to integrate accessibility in corporate cultures and bring about organizational change through accessibility-centered business and professional communication training to students while keeping up with the worldwide demographic, legal, and social developments surrounding disability.” The special issue is intended “to disturb the historic invisibility of the disabled subject—both human and communicational.”

Diana Fox Bentele

Exploring transformative usability in the business and professional writing classroom

Nielsen, D. (2018). *Business and Professional Communication Quarterly*, 81(1), 66–84. doi: 10.1177/2329490617748690

“This article addresses the importance of teaching transformative usability and accessibility concepts through the lens of disability studies in general business and professional communication courses. It argues that when students learn to analyze audiences, include diverse users, and foresee accessibility before the final draft because they practice user-centered design, their documents become more accessible for all users and situations. It presents a four-unit course plan that integrates disability studies and usability, including legal requirements. The unit plan advocates considering disability and diverse users and uses at the beginning of the design process.” The author provided a breakdown of the four units with the assignments for each unit.

Diana Fox Bentele

Foregrounding accessibility through (inclusive) universal design in professional communication curricula

Hitt, A. (2018). *Business and Professional Communication Quarterly*, 81(1), 52–65. doi: 10.1177/2329490617739884

“Incorporating universal design (UD) both as a topic of discussion and as a pedagogical approach allows business and professional communication instructors to foreground accessibility in ways that acknowledge the rhetorical situatedness of accessibility. This article offers UD strategies that reimagine accessibility not just as a requirement that accommodates users but as an opportunity to create a rich rhetorical user experience for diverse populations. To illustrate how accessibility can be foregrounded in professional communication curricula, this article details the development of an information design course focused on usability and accessibility.”

Diana Fox Bentele

Harry Potter and the first order of business: Using simulation to teach social justice and disability ethics in business communication

Wheeler, S. K. (2018). *Business and Professional Communication Quarterly*, 81(1), 85–99. doi: 10.1177/2329490617748691

“Despite the excellent work by scholars who invite us to consider disability, social justice, and business and professional communication pedagogy, little attention has been given to what a disability- and social-justice-centered business and professional communication course might look like in design and implementation. This case study offers an example of a simulation based within the Harry Potter universe that emphasizes the ways disability advocacy and civic engagement manifest themselves in foundational business writing theories and practices. This simulation enabled students to engage with social justice issues by understanding access as an essential part of business and professional communication.” The author provided a 16-week, 8-unit course outline with a schedule of deliverables.

Diana Fox Bentele

Unheard complaints: Integrating captioning into business and professional communication presentations

Clegg, G. M. (2018). *Business and Professional Communication Quarterly*, 81(1), 100–122. doi: 10.1177/2329490617748710

“This article explores pedagogical frameworks closely associated with d/Deaf and hard-of-hearing persons from the perspective of a disabled instructor to increase student awareness of the needs of diverse audiences they will encounter in the workforce. The author argues that students and instructors can use captioning theory to strategize one of the harder business communication genres, the presentation, for d/Deaf audiences to make communication more accessible. By raising critical awareness of the limits of technology, current trends in pedagogy, and disability, this article seeks to further the conversation about providing accessibility for disabled users in the classroom.”

Diana Fox Bentele

Ethics

Plain language to minimize cognitive load: A social justice perspective

Cheung, I. W. (2017). *IEEE Transactions on Professional Communication*, 60(4), 448–457. doi: 10.1109/TPC.2017.2759639

“This tutorial explores ethical implications of cognitive load theory and intersectional theory on technical and professional communication, and proposes plain language as an ethical imperative to redress social inequities. When the cognitive load of a learning task is too high and overwhelms working memory, learning is impaired. The greater stress and mental burden that marginalized populations experience can leave less working memory available for reading and learning. Using plain language to reduce cognitive load can be considered a political act that increases marginalized populations’ opportunities to understand.” The tutorial suggests these key lessons: “1. Consider whether marginalized populations are part of your audience. 2. Using personas to represent those populations, audit their mental burden to exercise cognitive empathy. 3. Consider reducing cognitive load via plain language

an ethical imperative. Assessing the presence and absence of specific marginalized groups is iterative and takes practice, but developing plain-language communications that accommodate these audiences reduces cognitive load for all readers. And although personas are useful for developing cognitive empathy, nothing replaces user testing in determining your communication’s effectiveness.”

Lyn Gattis

The social justice impact of plain language: A critical approach to plain-language analysis

Jones, N. N., & Williams, M. F. (2017). *IEEE Transactions on Professional Communication*, 60(4), 412–429. doi: 10.1109/TPC.2017.2762964

“This study investigates how plain language, examined from a social justice perspective, is implemented in mortgage documents and what the implications are for African-American homebuyers. . . . [The authors] examine plain language from a social-justice stance by turning a more critical eye toward how and why plain-language guidelines are implemented. [The] study focused on the initial disclosure statements for adjustable-rate mortgages. [The authors] paired critical discourse analysis with the Securities and Exchange Commission’s Plain English Handbook guidelines for disclosure statements to analyze three disclosure statements. [The authors] found that, generally speaking, each of the three disclosure statements effectively adhered to plain-language recommendations. However, the idea that plain language increases accessibility, reader comprehension, and usability is complicated, and the accessibility and usability of each document varied. [The authors] advocate for a human-centered approach that explores ways that plain-language guidelines can be applied along with a critical focus on amplifying agency and reducing inequity.”

Lyn Gattis

Health communication

Use of plain-language guidelines to promote health literacy

Greene, M., Cleary, Y., & Marcus-Quinn, A. (2017). *IEEE Transactions on Professional Communication*, 60(4), 384–400. doi: 10.1109/TPC.2017.2761578

“Studies by the American Institute of Medicine and the European Health Literacy Survey describe considerable levels of either inadequate or problematic health literacy. This health literacy problem is intensified when frontline healthcare practitioners must rely on printed education materials to compensate for the lack of time to instruct patients about their health management. Applying plain-language guidelines to health promotion materials may increase their effectiveness, particularly for patients with low health literacy.” Review and analysis of “scholarly, evidence-based studies that included reference to the use of plain-language guidelines . . . identified 13 articles that explored the use of plain-language guidelines in health literacy promotion. Analysis of these articles demonstrates that plain-language guidelines could play a strategic role in educating patients. Use of plain language could help healthcare practitioners to communicate critical and sometimes very complex health information effectively.”

Lyn Gattis

Information management

Automated classification of content components in technical communication

Oevermann, J., & Ziegler, W. (2018). *Computational Intelligence*, 34(1), 30–48. doi: 10.1111/coin.12157

“Automated classification is usually not adjusted to specialized domains due to a lack of suitable data collections and insufficient characterization of the domain-specific content and its effect on the classification process. This work describes an approach for the automated multiclass classification of content components used in technical communication based on a vector space model. [The authors] show that

differences in the form and substance of content components require an adaption of document-based classification methods and validate [their] assumptions with multiple real-world data sets in 2 languages. As a result, [the authors] propose general adaptations on feature selection and token weighting, as well as new ideas for the measurement of classifier confidence and the semantic weighting of XML-based training data. [They] introduce several potential applications of [their] method and provide prototypical implementation. [Their] contribution beyond the state of the art is a dedicated procedure model for the automated classification of content components in technical communication, which outperforms current document-centered or domain-agnostic approaches.”

Edward A. Malone

Instructions

Flowcharts, swimlanes, and timelines: Alternatives to prose in communicating legal-bureaucratic instructions to civil servants

Passera, S. (2018). *Journal of Business and Technical Communication*, 32(2), 229–272. doi: 10.1177/1050651917746459

“Government-published documents often fail to communicate clearly—not only with citizens but also with professional readers such as civil servants. Visual or multimodal approaches remain rare. This is a particularly unhelpful practice in regard to legal-bureaucratic instructions (e.g., contracts, rules, policies), which exist to guide compliant behavior. This study explores the development and experimental evaluation of a diagrammatic guide of terms and conditions for public procurement that is addressed to civil servants. Results show that the diagrammatic format, compared to prose, significantly enhances comprehension accuracy and answering speed and is perceived as more appealing and functional by users.”

Sean C. Herring

Intercultural issues

Ethnic/diasporic/transnational: The rise and fall of *ImaginAsian TV*

Han, B. (2018). *Television & New Media*, 19(3), 274–290. doi: 10.1177/1527476417704705

“This article examines the rise and fall of *ImaginAsian TV* to illustrate the travails of imagining a broadcast community of Asian Americans and the potential effect this has on the politics of representation. Drawing on institutional politics, media history, and oral interviews, the article analyzes the problematic conceptualization of a homogeneous Asian American audience, and further explicates how the usage of the English language in *ImaginAsian*’s programming strategy, despite its syndicated programs in different Asian languages, could not accommodate the disparate but interconnected cultural logics of transnationalism, race and ethnicity, and diaspora which structure Asian and Asian American identities.”

Yvonne Wade Sanchez

Language

Insider audiences and plain-language revision: A city charter case study

Dreher, K. (2017). *IEEE Transactions on Professional Communication*, 60(4), 430–477. doi: 10.1109/TPC.2017.2759578

“In policy and law contexts, plain-language practice and research tend to focus on the benefits of plain language for specific nonexpert or public audiences. However, as plain-language use has proliferated, documents targeted for revision increasingly include those with insider and expert primary audiences. This study investigates the effects of plain-language revision on insider audiences following the adoption of a revised city charter in a Midwestern US city. . . . Plain language—a strategy that writers use to make texts more effective for users—is historically and ideologically associated with helping public or vulnerable audiences to access complex information. This core priority toward public or nonexpert audiences is important; however, it has also

resulted in a limited understanding of the full scope of plain-language audiences, especially in contexts where insider and expert audiences are primary users. This study, informed by genre theory, is a qualitative case study in which textual artifacts and interview data were collected and analyzed using a two-cycle qualitative coding process. The analysis showed many effects, nearly all positive, for insiders and experts,” including “improved navigation, organization, and processes, through the concept of interplay between the unrevised and revised charters.”

Lyn Gattis

Plain language in the twenty-first century: Introduction [special issue]

Matveeva, N., Moosally, M., & Willerton, R. (eds). (2017). *IEEE Transactions on Professional Communication*, 60(4), 336–342. doi: 10.1109/TPC.2017.2759619

“This special issue offers the results of recent case studies and surveys, theoretical justifications, and historical overviews that explore the use of plain language in government and medical institutions, readers’ preferences concerning plain style, and the social implications of plain-language use. These articles extend the literature on plain language in new directions and could be useful in a variety of undergraduate and graduate courses on plain language, medical and health communication, government and business communication, ethics, and social justice. . . . The articles in this special issue offer some new discussion topics and raise important questions about the place and impact of the plain-language movement and about the role of plain-language principles in professional and technical communication.”

Lyn Gattis

Plain language in the US gains momentum: 1940–2015

Schriver, K. (2017). *IEEE Transactions on Professional Communication*, 60(4), 343–383. doi: 10.1109/TPC.2017.2765118

“Plain language evolved over the past 75 years from a sentence-based activity focused on readability of paper documents to a whole-text-based activity, emphasizing evidence-based principles of writing and visual design for paper, multimedia, and electronic artifacts.” This article compiles and synthesizes the history of plain-language development. “Between 1940 and 1970, plain language focused mainly on readability. During the 1970s, some practitioners began to employ usability testing. By the mid-1980s, there was a widespread sense that plain-language advocates had shifted priorities from readability to usability. Between 1980 and 2000, advocates broadened their vision beyond word- and sentence-level concerns to include discourse-level issues, information design, and accessibility. Between 2000 and 2015, advocates continued to worry over their old questions (‘Can people understand and use the content?’), but also asked, ‘Will people believe the content? Do they trust the message?’ By 2015, plain language had gained significant momentum in business, government, medicine, and education. . . . Plain-language practitioners expanded their concerns from how people understand the content—the usability and accessibility of the content—to whether people trust the content.” The article includes a timeline of plain-language development during this period.

Lyn Gattis

Plain-style preferences of US professionals

Campbell, K. S., Amare, N., Kane, E., Manning, A. D., & Naidoo, J. S. (2017). *IEEE Transactions on Professional Communication*, 60(4), 401–411. doi: 10.1109/TPC.2017.2759621

“Although plain language is almost universally promoted by teachers of professional writing, editors, and communication professionals, some have argued that the effects of and preferences for plain style in written messages differ among groups of individuals.” This study used an online survey instrument to investigate “preferences for two major style categories (conciseness and word choice)” among 614 working

adults in the US. . . . Statistical analysis of responses indicated “an overwhelming preference for plain style among US professionals who are native speakers of English. Reader preferences were stronger for elements associated with word choice than with conciseness. Those with lower education levels and blue-collar occupations had lower preferences for plain style.” The authors note two limitations of the study: (1) They “investigated only two aspects of plain style rather than the full range of elements that make up plain language” and (2) the survey instrument “presented readers with an artificial rather than an authentic reading experience. Future research may investigate the role of personality on stylistic preferences and the attributions readers make about writers based on their style.”

Lyn Gattis

Professional issues

Reimagining work: Normative commonplaces and their effects on accessibility in workplaces

Konrad, A. (2018). *Business and Professional Communication Quarterly*, 81(1), 123–141. doi: 10.1177/2329490617752577

“This article investigates how normative attitudes about work construct barriers to workers who are blind and visually impaired. The researcher collected narratives about rhetorical experiences from blind and visually impaired participants in the United States and analyzed accounts of these workplace interactions to identify rhetorical commonplaces that drive arguments about work. These commonplaces reveal the ableist assumptions that construct access barriers and constrain rhetorical possibilities for disabled workers’ self-advocacy. The author proposes that business and professional communication students and practitioners should engage in collaborative approaches to flexible thinking and leadership necessary for reimagining work in ways that promote accessibility.”

Diana Fox Bentele

Science writing

Better science through rhetoric: A new model and pilot program for training graduate student science writers

Gottschalk Druschke, C., Reynolds, N., Morton-Aiken, J., Lofgren, I. E., Karraker, N. E., & McWilliams, S. R. (2018). *Technical Communication Quarterly*, 27(2), 175–190.

doi: 10.1080/10572252.2018.1425735

“Graduate programs in the sciences offer minimal support for writing, yet there is an increasing need for scientists to engage with the public and policy makers. To address this need, the authors describe an innovative, cross-disciplinary, National Science Foundation (NSF)–funded training program in rhetoric and writing for science, technology, engineering, and math (STEM) graduate students and faculty at the University of Rhode Island. The program offers a theory-driven, flexible, scalable model that could be adopted in a variety of institutional contexts.”

Rhonda Stanton

Theory

Terminal node problems: ANT 2.0 and prescription drug labels

Kessler, M. M., & Graham, S. S. (2018). *Technical Communication Quarterly*, 27(2), 121–136. doi: 10.1080/10572252.2018.1425482

“This article examines prescription drug labels (PDLs) via an actor-network theory analysis to demonstrate current challenges with technical communication (TC) scholars’ appropriation of actor-network theory. The authors demonstrate that the complexity of the PDL network requires a more nuanced deployment of actor-network theory notions of durability and synchronicity. Specifically, the authors suggest that diachronic approaches to networks enable a more comprehensive understanding in ways that synchronic approaches cannot.”

Rhonda Stanton

Understanding communication of sustainability reporting: Application of symbolic convergence theory (SCT)

Hossain, M., Islam, M. T., Momin, M. A., Nahar, S., & Alam, M. S. (2018). *Journal of Business Ethics*, 1–24. doi: 10.1007/s10551-018-3874-6

“The purpose of this paper is to investigate the nature of rhetoric and rhetorical strategies that are implicit in the standalone sustainability reporting of the top 24 companies of the Fortune 500 Global. [The authors] adopt Bormann’s . . . SCT framework to study the rhetorical situation and how corporate sustainability reporting (CSR) messages can be communicated to the audience (public). The SCT concepts in the sustainability reporting’s communication are subject to different types of legitimacy strategies that are used by corporations as a validity and legitimacy claim in the reports. A content analysis has been conducted and structural coding schemes have been developed based on the literature. The schemes are applied to the SCT model which recognizes the symbolic convergent processes of fantasy among communicators in a Society. The study reveals that most of the sample companies communicate fantasy type and rhetorical vision in their corporate sustainability reporting. However, the disclosure or messages are different across locations and other taxonomies of the SCT framework. This study contributes to the current CSR literature about how symbolic or fantasy understandings can be interpreted by the users. It also discusses the persuasion styles that are adopted by the companies for communication purposes. This study is the theoretical extension of the SCT. Researchers may be interested in further investigating other online communication paths, such as human rights reports and director’s reports.”

Yvonne Wade Sanchez

Usability

The art of selling-without-selling: Understanding the genre ecologies of content marketing

Wall, A., & Spinuzzi, C. (2018). *Technical Communication Quarterly*, 27(2), 137–160. doi: 10.1080/10572252.2018.1425483

“Content marketing involves creating content in genres that readers find useful. These genres individually do not persuade their readers to buy a given product and may not even mention the product or service being marketed. But collectively, they are designed to lead their readers to a purchase decision, that is, they sell without selling. The authors examine how content marketers strategically deploy these ecologies of genres.”

Rhonda Stanton

Mapping use, storytelling, and experience design: User-network tracking as a component of usability and sustainability

Bacha, J. A. (2018). *Journal of Business and Technical Communication*, 32(2), 198–228. doi: 10.1177/1050651917746708

“Framed around three different antenarratives about system development, this article builds on established user-centered theories to present a mixed-method approach to user experience (UX) design. By combining network theory, storytelling, and process mapping, this article provides a practical method of including users’ experiences during the predevelopment stages of building workplace-specific digital technologies. Specifically, this article argues for the collection of user-generated antenarratives as the first step in UX product development and demonstrates how to use those experience-based stories.”

Sean C. Herring

Poor poor dumb mouths, and bid them speak for me: Theorizing the use of personas in practice

Rose, E. J., & Tenenberg, J. (2018). *Technical Communication Quarterly*, 27(2), 161–174. doi: 10.1080/10572252.2017.1386005

“Although personas are commonly used to represent users in design, their rhetorical function has been little explored. In this article, the authors theorize personas’ rhetorical function as ventriloquization, where one person speaks with the voice of another. In ventriloquizing users through personas, practitioners speak for users, while scripting personas to speak for their creators: Each magnifies the others’ voice. Personas represent a strategic rhetorical gambit for gaining legitimacy within organizations and technological decision-making processes.”

Rhonda Stanton

Things that squeak and make you feel bad: Building scalable user experiences programs for space assessment

Kuglitsch, R., & Couture, J. (2018). *Weave*, 1(8). doi: 10.3998/weave.12535642.0001.801

This article addresses the problems of beginning a user experience (UX) program in the context of library systems, including limitations of staff and time, and of getting buy-in from all stakeholders to meet users’ needs. “This article suggests a process for creating a user experience (UX) assessment of space program that requires limited resources and minimal prior UX experience. By beginning with small scale methods, like comment boxes and easel prompts, librarians can overturn false assumptions about user behaviors, ground deeper investigations such as focus groups, and generate momentum. At the same time, these methods should feed into larger efforts to build trust and interest with peers and administration, laying the groundwork for more in-depth space UX assessment and more significant changes. The process and approach [the authors] suggest can be scaled for use in both large and small library systems.” This article is helpful to anyone who needs to begin UX practice in their workplace: Start small and use that data to build a larger UX practice.

Diana Fox Bentele